

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



NOTICE OF APPLICATION AND PRELIMINARY DECISION FOR WATER QUALITY TPDES PERMIT AMENDMENT FOR INDUSTRIAL WASTEWATER

PERMIT NO. WQ0002496000

APPLICATION AND PRELIMINARY DECISION. Southwestern Electric Power Company, 2400 Farm-to-Market Road 3251, Hallsville, Texas 76560, which operates the Henry W. Pirkey Power Plant, has applied to the Texas Commission on Environmental Quality (TCEQ) for a major amendment to TPDES Permit No. WQ0002496000 to authorize landfill pond expansion and relocation of Outfall 004; the use of ash pond water as dust suppressant; the reduction of monitoring frequency for total selenium at Outfall 102; elimination of compliance schedule at Outfall 006; the reinstatement of flow weighted average temperature definition in the permit for Outfall 002, and a reduction of monitoring frequency for total suspended solids at Outfall 302. The current permit authorizes the discharge of once through cooling water and previously monitored effluents at a daily average flow not to exceed 600,000,000 gallons per day via Outfall 002; low volume wastewater on an intermittent and flow variable basis via Outfall 102; Plant "X" treated effluent at a daily average flow not to exceed 800,000 gallons per day via Outfall 202; domestic wastewater at a daily average flow not to exceed 15,000 gallons per day via Outfall 302; wastewater from the Lignite Runoff Pond on an intermittent and flow variable basis via Outfall 003; wastewater from the Flue Gas Desulphurization/Fly Ash Landfill Retention Pond on an intermittent and flow variable basis via Outfall 004; wastewater from the Limestone Runoff Pond on an intermittent and flow variable basis via Outfall 005, and wastewater from the Ash Pond on an intermittent and flow variable basis via Outfall 006. This application was submitted to the TCEQ on August 31, 2006.

The facility is located adjacent to Red Oak Road at a point approximately six miles southeast of the City of Hallsville, Harrison County, Texas. The effluent is discharged via Outfalls 002 and 003 to Brandy Branch Reservoir; thence to Brandy Branch Creek; thence to the Sabine River Above Toledo Bend Reservoir in Segment 0505 of the Sabine River Basin; and via Outfalls 004, 005 and 006 to unnamed tributaries of Hatley Creek; thence to Hatley Creek; thence to Sabine River Above Toledo Bend Reservoir, in Segment No. 0505 of the Sabine River Basin. The unclassified receiving waters have no significant aquatic life use for the unnamed tributaries, high aquatic life use for Brandy Branch Reservoir, no significant aquatic life use for Brandy Branch Creek, and high aquatic life use for Hatley Creek. The designated uses for Segment No. 0505 are contact recreation, high aquatic life use, and public water supply.

In accordance with § 307.5 and the TCEQ implementation procedures (January 2003) for the Texas Surface Water Quality Standards, an antidegradation review of the receiving waters was performed. A Tier 1 antidegradation review has preliminarily determined that existing water quality uses will not be impaired by this permit action. Numerical and narrative criteria to protect existing uses will be maintained. A Tier 2 review has preliminarily determined that no significant degradation of water quality is expected in Brandy Branch Reservoir, which has been identified as having a high aquatic life uses. Existing uses will be maintained and protected. The preliminary determination can be reexamined and may be modified if new information is received.

The TCEQ Executive Director has completed the technical review of the application and prepared a draft permit. The draft permit, if approved, would establish the conditions under which the facility must operate. The Executive Director has made a preliminary decision that this permit, if issued, meets all statutory and regulatory requirements. The permit application, Executive Director's preliminary decision, and draft permit are available for viewing and copying at the City of Marshall Public Library, 300 South Alamo Street, Marshall, Texas.

PUBLIC COMMENT / PUBLIC MEETING. You may submit public comments or request a public meeting about this application. The purpose of a public meeting is to provide the opportunity to submit comments or to ask questions about the application. TCEQ holds a public meeting if the Executive Director determines that there is a significant degree of public interest in the application or if requested by a local legislator. A public meeting is not a contested case hearing.

OPPORTUNITY FOR A CONTESTED CASE HEARING. After the deadline for submitting public comments, the Executive Director will consider the comments and prepare a response to all relevant and material, or significant public comments. **Unless the application is directly referred for a contested case hearing, the response to comments will be mailed to everyone who submitted public comments and to those persons who are on the mailing list for this application. If comments are received, the mailing will also provide instructions for requesting a contested case hearing or reconsideration of the Executive Director's decision.** A contested case hearing is a legal proceeding similar to a civil trial in a state district court.

TO REQUEST A CONTESTED CASE HEARING, YOU MUST INCLUDE THE FOLLOWING ITEMS IN YOUR REQUEST: your name; address, phone; applicant's name and permit number; the location and distance of your property/activities relative to the facility; a specific description of how you would be adversely affected by the facility in a way not common to the general public; and the statement "[I/we] request a contested case hearing." If the request for contested case hearing is filed on behalf of a group or association, the request must designate the group's representative for receiving future correspondence; identify an individual member of the group who would be adversely affected by the proposed facility or activity; provide the information discussed above regarding the affected member's location and distance from the facility or activity; explain how and why the member would be affected; and explain how the interests the group seeks to protect are germane to the group's purpose.

Following the close of all applicable comment and request periods, the Executive Director will forward the application and any requests for reconsideration or for a contested case hearing to the TCEQ Commissioners for their consideration at a scheduled Commission meeting.

The Commission will only grant a contested case hearing on disputed issues of fact that are relevant and material to the Commission's decision on the application. Further, the Commission will only grant a hearing on issues that were raised in timely filed comments that were not subsequently withdrawn.

EXECUTIVE DIRECTOR ACTION. The Executive Director may issue final approval of the application unless a timely contested case hearing request or request for reconsideration is filed. If a timely hearing request or request for reconsideration is filed, the Executive Director will not issue final approval of the permit and will forward the application and request to the TCEQ Commissioners for their consideration at a scheduled Commission meeting.

MAILING LIST. If you submit public comments, a request for a contested case hearing or a reconsideration of the Executive Director's decision, you will be added to the mailing list for this specific application to receive future public notices mailed by the Office of the Chief Clerk. In addition, you may request to be placed on: (1) the permanent mailing list for a specific applicant name and permit number; and/or (2) the mailing list for a specific county. If you wish to be placed on the permanent and/or the county mailing list, clearly specify which list(s) and send your request to TCEQ Office of the Chief Clerk at the address below.

All written public comments and public meeting requests must be submitted to the Office of the Chief Clerk, MC 105, TCEQ, P.O. Box 13087, Austin, TX 78711-3087 within 30 days from the date of newspaper publication of this notice.

AGENCY CONTACTS AND INFORMATION. If you need more information about this permit application or the permitting process, please call the TCEQ Office of Public Assistance, Toll Free, at 1-800-687-4040. Si desea información en Español, puede llamar al 1-800-687-4040. General information about the TCEQ can be found at our web site at www.TCEQ.state.tx.us.

Further information may also be obtained from Southwestern Electric Power Company at the address stated above or by calling Mr. Franklin L. Mills at (214) 777-1507.

Issued:

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

For proposed Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0002496000 (TX0087726) to discharge to water in the state.

Issuing Office: Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

Applicant: Southwestern Electric Power Company
2400 Farm-to-Market Road 3251
Hallsville, Texas 76560

Prepared By: John O. Onyenobi, P.E., NSPE
Wastewater Permitting Section
Water Quality Division
(512) 239-6707

Date: November 10, 2006

Permit Action: Amendment Permit; TPDES Permit No. WQ0002496000

I. EXECUTIVE DIRECTOR RECOMMENDATION

The Executive Director has made a preliminary decision that this permit, if issued, meets all statutory and regulatory requirements. It is proposed the permit be issued to expire on April 1, 2011 in accordance with 30 TAC § 305.71, Basin Permitting.

II. APPLICANT ACTIVITY

The applicant currently operates the Henry W. Pirkey Power Plant.

III. DISCHARGE LOCATION

As described in the application, the plant site is located adjacent to Red Oak Road at a point approximately six miles southeast of the City of Hallsville, Harrison County, Texas. Discharge is via Outfalls 002 and 003, to Brandy Branch Reservoir; thence to Brandy Branch Creek; thence to the Sabine River Above Toledo Bend Reservoir in Segment 0505 of the Sabine River Basin; and via Outfalls 004, 005 and 006 to unnamed tributaries of Hatley Creek; thence to Hatley Creek; thence to Sabine River Above Toledo Bend Reservoir in Segment No. 0505 of the Sabine River Basin.

IV. RECEIVING STREAM USES

The unclassified receiving waters have no significant aquatic life use for the unnamed tributaries, high aquatic life use for Brandy Branch Reservoir, no significant aquatic life use for Brandy Branch Creek, and high aquatic life use for Hatley Creek. The designated uses for Segment No. 0505 are contact recreation, high aquatic life use, and public water supply.

V. STREAM STANDARDS

The general criteria and numerical criteria which make up the stream standards are provided in the Texas Administrative Code, 30 TAC §307.1 - §307.10, effective April 30, 1997.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

VI. DISCHARGE DESCRIPTION

The following is a quantitative description of the discharge described in the Monthly Effluent Report data for the period September 2003 through September 2006. The "Average of Daily Avg." values presented in the following table are the average of all daily average values for the reporting period for each parameter. The "Maximum of Daily Max." values presented in the following table are the individual maximum values for the reporting period for each parameter:

A. Flow

<u>Outfall</u>	<u>Frequency</u>	<u>Average of Daily Avg (MGD)</u>	<u>Maximum of Daily Max (MGD)</u>
002	Continuous	(442.6)	(632.9)
102	Intermittent	(24.76)	(33.13)
202	Continuous	No discharge during permit term	
302	Continuous	(0.0021)	(0.0088)
003	Intermittent	No discharge during permit term	
004	Intermittent	(1.55)	(3.0)
005	Intermittent	(0.36)	(2.0)
006	Intermittent	(1.49)	(5.0)

B. Temperature [degrees F (°F)]

<u>Outfall</u>	<u>Daily Avg.</u>	<u>Daily Max.</u>
002	92.86 °F	113 °F

C. Effluent Characteristics

<u>Outfall</u>	<u>Parameter</u>	<u>Average of Daily Avg.</u>	<u>Maximum of Daily Max.</u>
002	Total Residual Chlorine	N/A N/A	0.2 mg/l 37.8 lbs/day
102	Total Suspended Solids	1.57 mg/l	5.0 mg/l
	Oil and Grease	<5 mg/l	<5 mg/l
	Total Selenium	0.0044 mg/l	0.007 mg/l
	pH, standard units (s.u.)	6.2 s.u. (min.)	9.0 s.u. (max.)
202	Total Suspended Solids	No discharge during permit term	
	Oil and Grease	No discharge during permit term	
	Total Selenium	No discharge during permit term	
	Total Iron	No discharge during permit term	
	Total Copper	No discharge during permit term	
	pH, standard units (s.u.)	No discharge during permit term	

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

<u>Outfall</u>	<u>Parameter</u>	<u>Average of Daily Avg.</u>	<u>Maximum of Daily Max.</u>
302	Biochemical Oxygen Demand (5-day)	5.7 mg/l <1 lb/day	10 mg/l N/A
	Total Suspended Solids	4.95 mg/l <1 lb/day	15 mg/l N/A
	Total Chlorine Residual	1.0 mg/l (min.)	4.0 mg/l (max.)
	pH, standard units (s.u.)	6.4 s.u. (min.)	8.3 s.u. (max.)
003	Total Suspended Solids	No discharge during permit term	
	Oil and Grease	No discharge during permit term	
	Total Selenium	No discharge during permit term	
	pH, standard unit (s.u.)	No discharge during permit term	
004	Total Suspended Solids	N/A	41 mg/l
	Oil and Grease	N/A	<5 mg/l
	Total Selenium	N/A	0.023 mg/l
	pH, standard units (s.u.)	6.0 s.u. (min.)	7.0 s.u. (max.)
005	Total Suspended Solids	N/A	29 mg/l
	Oil and Grease	N/A	<5 mg/l
	pH, standard units (s.u.)	7.0 s.u. (min.)	8.0 s.u. (max.)
006	Total Suspended Solids	6.0 mg/l	18.0 mg/l
	Oil and Grease	<5 mg/l	<5 mg/l
	Total Selenium	0.008 mg/l	0.016 mg/l
	pH, standard units (s.u.)	6.4 s.u. (min.)	8.9 s.u. (max.)

D. Permit Exceedances

Outfall	Dates	Pollutants	Permit Limits		Reported Values	
			Daily Avg.	Daily Max.	Daily Avg.	Daily Max.
002	28-Feb-2006	Flow (MGD)	(600)	(600)	(207.36)	(632.88)
	31-Jan-2006	Flow (MGD)	(600)	(600)	(632.88)	(632.88)

The exceedances in the effluent flow limits at Outfall 002 appear to be an anomaly. Specifically, recording a flow of 632.88 million gallons per day (MGD) for two consecutive months. No permit actions are proposed.

VII. PROPOSED EFFLUENT LIMITATIONS

Final effluent limitations are established in the draft permit as follows:

<u>Outfall No.</u>	<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
002	Flow (MGD)	(600)	(600)
	Temperature (°F)	(Report)	(122)

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

<u>Outfall No.</u>	<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
002	Total Residual Chlorine	N/A	0.2 mg/l
		N/A	75.6 lbs/day
102	Flow (MGD)	(Report)	(Report)
	Total Suspended Solids	30 mg/l	100 mg/l
	Oil and Grease	15 mg/l	20 mg/l
	Selenium, Total	0.012 mg/l	0.025 mg/l
	pH, standard units (s.u.)	Between 6.0 and 9.0 standard units	
202	Flow (MGD)	(0.8)	(0.8)
	Total Suspended Solids	30 mg/l	100 mg/l
	Oil and Grease	15 mg/l	20 mg/l
	Selenium, Total	0.016 mg/l	0.033 mg/l
	Iron, Total	1.0 mg/l	1.0 mg/l
	Copper, Total	0.5 mg/l	1.0 mg/l
	pH, standard units (s.u.)	Between 6.0 and 9.0 standard units	
302	Flow (MGD)	(0.015)	(0.030)
	Biochemical Oxygen Demand (5-day)	20 mg/l	65 mg/l
		2.5 lbs/day	N/A
	Total Suspended Solids	20 mg/l	65 mg/l
		2.5 lbs/day	N/A
	Total Residual Chlorine	1.0 mg/l (min.)	Report, mg/l (max.)
	pH, standard units (s.u.)	Between 6.0 and 9.0 standard units	
003	Flow (MGD)	(Report)	(Report)
	Total Suspended Solids	N/A	50 mg/l
	Oil and Grease	N/A	20 mg/l
	Selenium, Total	N/A	0.033 mg/l
	pH, standard units (s.u.)	Between 6.0 and 9.0 standard units	
004	Flow (MGD)	(Report)	(Report)
	Total Suspended Solids	N/A	100 mg/l
	Oil and Grease	N/A	20 mg/l
	Selenium, Total	N/A	0.036 mg/l
	pH, standard units (s.u.)	Between 6.0 and 9.0 standard units	
005	Flow (MGD)	(Report)	(Report)
	Total Suspended Solids	N/A	50 mg/l
	Oil and Grease	N/A	20 mg/l
	pH, standard units (s.u.)	Between 6.0 and 9.0 standard units	
006	Flow (MGD)	(Report)	(Report)
	Total Suspended Solids	30 mg/l	100 mg/l
	Oil and Grease	15 mg/l	20 mg/l
	Selenium, Total	0.006 mg/l	0.013 mg/l
	pH, standard units (s.u.)	Between 6.0 and 9.0 standard units	

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

VIII. SUMMARY OF CHANGES FROM APPLICATION

The applicant requested the following changes in their amendment request which the Executive Director did not grant.

1. The permittee requested the issuance of a full five-year permit term due to compliance with the 3-year compliance schedule for total selenium at Outfall 006. The permit term in the draft is predicated on the basin permitting rule which is determined from the segment to which the effluent is discharged. Therefore, if issued the permit will expire at midnight on April 1, 2011.
2. The permittee failed to submit effluent characteristic data for Outfalls 004 and 005, therefore, retest requirements have been stipulated in the draft permit based on U.S. EPA guidance and Texas Commission on Environmental Quality (TCEQ) practices on effluent discharges via external outfalls.

See the next section for additional changes to the existing permit.

IX. SUMMARY OF CHANGES FROM EXISTING PERMIT

The permittee requested the following changes in their amendment request which the Executive Director has recommended granting.

1. The expansion of ash landfill storm water retention pond capacity, and the relocation of existing Outfall 004.
2. The use of ash pond water as a dust suppressant to supplement the volume of water currently utilized from the service water system in order to conserve overall water consumption.
3. The reduction of monitoring frequency for total selenium at Outfall 102.
4. The elimination of compliance schedule for total selenium at Outfall 006 as the permittee has attained the final phase of the permit.
- ✓ 5. The reinstatement of flow weighted average temperature (FWAT) definition in the draft permit at Outfall 002 as the definition for FWAT was inadvertently omitted from the "Other Requirements" section of the permit during the last permit action.
6. The reduction of monitoring frequency for total suspended solids (TSS) at Outfall 302.

The following additional changes have been made to the draft permit.

1. The Standard Conditions of the draft permit are updated based on current TCEQ practices and policies.
2. Cooling water intake structure requirements have been added to the draft permit as "Other Requirements" item 13.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

X. DRAFT PERMIT RATIONALE

The following section sets forth the statutory and regulatory requirements considered in preparing the draft permit. Also set forth are any calculations or other necessary explanations of the derivation of specific effluent limitations and conditions, including a citation to the applicable effluent limitation guidelines and water quality standards.

A. REASON FOR PERMIT ISSUANCE

The applicant has applied to the TCEQ for a major amendment to Permit No. WQ0002496000 to authorize the expansion of ash landfill storm water retention pond capacity, and the relocation of existing Outfall 004; the use of ash pond water as a dust suppressant to supplement the volume of water currently utilized from the service water system in order to conserve overall water consumption; a reduction of monitoring frequency for total selenium at Outfall 102; removal of compliance schedule for total selenium at Outfall 006; issuance of a full five-year term permit due to removal of limiting compliance schedule for total selenium at Outfall 006; a reinstatement of flow weighted average temperature (FWAT) definition at Outfall 002; and a reduction in monitoring frequency for total suspended solids (TSS) at Outfall 302. The current permit authorizes the discharge of once through cooling water and previously monitored effluents at a daily average flow not to exceed 600,000,000 gallons per day via Outfall 001; low volume wastewater on an intermittent and flow variable basis via Outfall 102; Plant "X" treated effluent at a daily average flow not to exceed 800,000 gallons per day via Outfall 202 which remains the same; domestic wastewater at a daily average flow not to exceed 30,000 gallons per day via Outfall 302; wastewater from the Lignite Runoff Pond on an intermittent and flow variable basis via Outfall 003 which remains the same; wastewater from the Flue Gas Desulphurization/Fly Ash Landfill Retention Pond on an intermittent and flow variable basis via Outfall 004; wastewater from the Limestone Runoff Pond on an intermittent and flow variable basis via Outfall 005 which remains the same, and wastewater from the Ash Pond on an intermittent and flow variable basis via Outfall 006.

B. WATER QUALITY SUMMARY

The discharge route is via Outfalls 002 and 003 to Brandy Branch Reservoir; thence to Brandy Branch Creek; thence to the Sabine River Above Toledo Bend Reservoir in Segment 0505 of the Sabine River Basin; and via Outfalls 004, 005 and 006 to unnamed tributaries of Hatley Creek; thence to Hatley Creek; thence to Sabine River Above Toledo Bend Reservoir, Segment No. 0505 of the Sabine River Basin. The unclassified receiving waters have no significant aquatic life use for the unnamed tributaries, high aquatic life use for Brandy Branch Reservoir, no significant aquatic life use for Brandy Branch Creek, and high aquatic life use for Hatley Creek. The designated uses for Segment No. 0505 are contact recreation, high aquatic life use, and public water supply. Effluent limitations and/or conditions established in the draft permit are in compliance with state water quality standards and the applicable water quality management plan. The effluent limits in the draft permit will maintain and protect the existing instream uses. Additional discussion of the water quality aspects of the draft permit will be found at Section X.D. of this fact sheet.

In accordance with §307.5 and the TCEQ implementation procedures (January 2003) for the Texas Surface Water Quality Standards, an antidegradation review of the receiving waters was performed. A Tier 1 antidegradation review has preliminarily determined that existing water quality uses will not be impaired by this permit action. Numerical and narrative criteria to protect

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

existing uses will be maintained. A Tier 2 review has preliminarily determined that no significant degradation of water quality is expected in Brandy Branch Reservoir, which has been identified as having a high aquatic life uses. Existing uses will be maintained and protected. The preliminary determination can be reexamined and may be modified if new information is received.

The discharge from this permit action is not expected to have an effect on any federal endangered or threatened aquatic or aquatic dependent species or proposed species or their critical habitat. This determination is based on the United States Fish and Wildlife Service's (USFWS) biological opinion on the State of Texas authorization of the Texas Pollutant Discharge Elimination System (TPDES; September 14, 1998; October 21, 1998 update). To make this determination for TPDES permits, TCEQ and EPA only considered aquatic or aquatic dependent species occurring in watersheds of critical concern or high priority as listed in Appendix A of the USFWS biological opinion. The determination is subject to reevaluation due to subsequent updates or amendments to the biological opinion. The permit does not require EPA review with respect to the presence of endangered or threaten species.

Segment No. 0505 is currently listed on the State's inventory of impaired and threatened waters, Texas 2002 Clean Water Act Section 303(d) List, Texas Commission on Environmental Quality, February 2005. The listing is specifically for elevated bacteria levels in a 22-mile reach near State Highway (SH) 149. Outfall 302 is an internal outfall of Outfall 002. Domestic wastewater is chlorinated at Outfall 302 prior to discharge to Outfall 002, thence to the receiving water body. Therefore, this permit action is not likely to contribute to the impairment of Sabine River Above Toledo Bend Reservoir in Segment 0505.

C. TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS1. GENERAL COMMENTS

Regulations promulgated in Title 40 of the Code of Federal Regulations require technology-based limitations be placed in wastewater discharge permits based on effluent limitations guidelines, where applicable, and/or on best professional judgment (BPJ) in the absence of guidelines.

The proposed permit authorizes the discharge of once through cooling water and previously monitored effluents at a daily average flow not to exceed 600 MGD and a daily maximum flow not to exceed 600 MGD via Outfall 002; low volume wastewater on an intermittent and flow variable basis via Outfall 102; Plant "X" treated effluent (metal cleaning waste, chemical metal cleaning waste; low volume waste, coal pile runoff, and ash transport water) at a daily average flow not to exceed 0.8 MGD via Outfall 202; domestic wastewater at a daily average flow not to exceed 0.015 MGD and a daily maximum flow not to exceed 0.30 MGD via Outfall 302; wastewater from the Lignite Runoff Pond on an intermittent and flow variable basis via Outfall 003; wastewater from the Flue Gas Desulphurization/Fly Ash Landfill Retention Pond on an intermittent and flow variable basis via Outfall 004; wastewater from the Limestone Runoff Pond on an intermittent and flow variable basis via Outfall 005; and wastewater from Ash Pond on an intermittent and flow variable basis via Outfall 006.

The discharge of once through cooling water via Outfall 002; low volume wastewater via Outfall 102; Plant "X" treated effluent via Outfall 202; domestic wastewater via Outfall 302; wastewater from the Lignite Runoff Pond via Outfall 003; wastewater from the Flue

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Gas Desulphurization/Fly Ash Landfill Retention Pond via Outfall 004; and wastewater from the Ash Pond via Outfall 006 from this facility is subject to federal effluent limitation guidelines under 40 CFR 122 and/or 40 CFR 423. A new source determination was performed and the above listed discharges are not new sources as defined at 40 CFR § 122.2. Therefore new source performance standards (NSPS) are not required for this discharge.

The discharge of wastewater from Limestone Runoff Pond via Outfall 005 is not subject to federal effluent limitation guidelines and any technology-based effluent limitations are based on best professional judgement.

Source water for cooling operations for the Pirkey Power Plant is obtained from Brandy Branch Reservoir. Outfalls 002, 102, 202, 302, and 003 discharge to Brandy Branch Reservoir. Outfalls 004, 005, and 006 discharge to unnamed tributaries of Hatley Creek. Once through condenser cooling water and once through miscellaneous cooling water (collectively referred to as "once through cooling water" in the permit) receive no treatment prior to discharge at Outfall 002. Low volume wastes (demineralizer regenerant and floor/yard drains) are routed to the Ecology Pit for settling, precipitation, and flocculation prior to discharge via Outfall 102. Additionally, demineralizer regenerant is routed to a chemical sump and neutralization tank prior to being routed to the Ecology Pit. The permittee may route metal cleaning wastes/chemical metal cleaning wastes, wastewater from the Ash Pond, and wastewater from the Lignite Runoff Pond to Plant "X".

Plant "X" provides pH neutralization, filtration, settling, oil/water separation, and chemical wastewater treatment prior to discharge via Outfall 202. Additionally, metal cleaning wastes and chemical metal cleaning wastes are routed to the Metal Cleaning Waste Pond prior to being routed to Plant "X." Domestic sewage is subject to pH neutralization, filtration, settling/clarifier solids separation, chlorination, and chemical wastewater treatment prior to discharge via Outfall 302. Storm water from the lignite storage area is routed to the Lignite Runoff Pond where it is subject to settling and precipitation/flocculation prior to discharge via Outfall 003. Storm water runoff from the flue gas desulfurization/fly ash sludge landfill is routed to the Flue Gas Desulphurization/Fly Ash Landfill Retention Pond where it is subject to settling and precipitation/flocculation prior to discharge via Outfall 004. The permittee may also transfer wastewater from the Lignite Runoff Pond to the Flue Gas Desuphurization/Fly Ash Landfill Retention Pond for treatment and discharge via Outfall 004. Storm water from the limestone storage area is routed to the Limestone Runoff Pond where it is subject to settling and precipitation/flocculation prior to discharge via Outfall 005. Low volume wastes (boiler blowdown and demineralizer regenerant) and ash transport water are routed to the Ash Pond where they are subject to separation, pH adjustment, settling, and precipitation/flocculation prior to discharge via Outfall 006.

2. CALCULATIONS

See Appendix A of this fact sheet for calculations and further discussion of technology-based effluent limitations proposed in the draft permit.

Technology-based effluent limitations for Total Residual Chlorine at Outfall 002; Total Suspended Solids (TSS) and oil and grease at Outfall 102; TSS, Oil and Grease, Total Iron

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

and Total Copper at Outfall 202; TSS and Oil and Grease at Outfall 003 and 004; and TSS and Oil and Grease at Outfalls 005 and 006 are continued from the existing permit.

The following technology-based effluent limitations are proposed in the draft permit:

<u>Outfall No.</u>	<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
002	Total Residual Chlorine	N/A	0.2 mg/l
		N/A	75.6 lbs/day
102	Total Suspended Solids	30 mg/l	100 mg/l
	Oil and Grease	15 mg/l	20 mg/l
	pH, standard units (s.u.)	Between 6.0 and 9.0 standard units	
202	Total Suspended Solids	30 mg/l	100 mg/l
	Oil and Grease	15 mg/l	20 mg/l
	Total Iron	1.0 mg/l	1.0 mg/l
	Total Copper	0.5 mg/l	1.0 mg/l
	pH, standard units (s.u.)	Between 6.0 and 9.0 standard units	
003	Total Suspended Solids	N/A	50 mg/l
	Oil and Grease	N/A	20 mg/l
	pH, standard units (s.u.)	Between 6.0 and 9.0 standard units	
004	Total Suspended Solids	N/A	100 mg/l
	Oil and Grease	N/A	20 mg/l
	pH, standard units (s.u.)	Between 6.0 and 9.0 standard units	
005	Total Suspended Solids	N/A	50 mg/l
	Oil and Grease	N/A	20 mg/l
	pH, standard units (s.u.)	Between 6.0 and 9.0 standard units	
006	Total Suspended Solids	30 mg/l	100 mg/l
	Oil and Grease	15 mg/l	20 mg/l
	pH, standard units (s.u.)	Between 6.0 and 9.0 standard units	

D. WATER QUALITY-BASED EFFLUENT LIMITATIONS/CONDITIONS1. GENERAL COMMENTS

The Texas Surface Water Quality Standards found at 30 TAC Chapter 307 state that "surface waters will not be toxic to man from ingestion of water, consumption of aquatic organisms, or contact with the skin, or to terrestrial or aquatic life." The methodology outlined in the "Implementation of the Texas Commission on Environmental Quality Standards via Permitting" is designed to insure compliance with 30 TAC Chapter 307. Specifically, the methodology is designed to insure that no source will be allowed to discharge any wastewater which: (1) results in instream aquatic toxicity; (2) causes a violation of an applicable narrative or numerical state water quality standard; (3) results in the endangerment of a drinking water supply; or (4) results in aquatic bioaccumulation which threatens human health.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

TPDES permits contain technology-based effluent limits reflecting the best controls available. Where these technology-based permit limits do not protect water quality or the designated uses, additional water quality-based effluent limitations and/or conditions are included. State narrative and numerical water quality standards are used in conjunction with EPA criteria and other toxicity data bases to determine the adequacy of technology-based permit limits and the need for additional water quality-based controls.

(2) AQUATIC LIFE CRITERIA(a) SCREENING

Analytical data reported in the application for Outfalls 002 and 006 were screened against calculated water quality-based effluent limitations for protection of aquatic life. Water quality-based effluent limitations are calculated from freshwater aquatic life criteria found in Table 1 of the Texas Surface Water Quality Standards (30 TAC Chapter 307). The discharges from internal Outfalls 102, 202 and 302 are not subject to screening against water quality-based effluent limitations.

i. Outfall 002

Acute freshwater criteria are applied at the edge of the zone of initial dilution (ZID) and chronic freshwater criteria are applied at the edge of the aquatic life mixing zone. The ZID for this discharge is defined as radius of 25 feet from the point where the discharge enters Brandy Branch Reservoir. The aquatic life mixing zone for this discharge is defined as a radius of 100 feet from the point where the discharge enters Brandy Branch Reservoir.

Self reporting data indicates the two-year highest daily average flow from Outfall 002 is 442.6 million gallons per day (MGD). TCEQ uses the EPA horizontal jet plume model to estimate dilution at the edge of the ZID and aquatic life mixing zone (MZ) for discharges greater than 10 MGD into lakes and reservoirs. General assumptions used in the horizontal jet plume model are: a non-buoyant discharge, a submersed pipe, and no cross flow. Based on this analysis the following effluent dilutions are calculated based on the permitted flow of >100 MGD:

Acute Effluent %:	100%	Chronic Effluent %:	100%
-------------------	------	---------------------	------

ii. Outfall 003

Because Outfall 003 discharges on an intermittent and flow variable basis, the discharge is screened using acute freshwater criteria only. Acute freshwater criteria are applied at the edge of the zone of initial dilution (ZID). The ZID for discharges into lakes and reservoirs is defined as radius of 25 feet from the point where the discharge enters Brandy Branch Reservoir.

Self report data indicates there has been no discharge from Outfall 003

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

from September 2003 through September 2006. For the purpose of this screening, the TCEQ has assumed an effluent flow <10 MGD. TCEQ practice is to establish minimum estimated effluent percentages at the edges of the ZID and aquatic life mixing zone for discharges that are 10 MGD or less into sections of lakes or reservoirs that are at least 200 feet wide. These critical effluent percentages are as follows:

Acute Effluent %: 60% Chronic Effluent %: 15%

iii. Outfall 004

Because Outfall 004 discharges on an intermittent and flow variable basis, the discharge is screened using acute freshwater criteria only. There is no mixing zone or zone of initial dilution (ZID) for this discharge directly to an intermittent stream; acute freshwater criteria apply at the end of pipe. Chronic freshwater criteria are applied in the perennial freshwater stream.

For the intermittent stream, the percent effluent for acute protection of aquatic life is 100% since the 7Q2 of the intermittent stream is 0.0 cfs. This effluent percentage also provides acute protection of aquatic life in the perennial stream. TCEQ uses the mass balance equation to estimate dilution in the perennial stream during critical conditions. The estimated dilution for chronic protection of aquatic life is calculated using the two-year maximum monthly average flow of 2.25 MGD and the 7-day, 2-year (7Q2) flow of 0.36 cfs for Hatley Creek, the perennial stream. The following critical effluent percentages are being used:

Acute Effluent %: 100% Chronic Effluent %: 90.6%

iv. Outfall 005

Because Outfall 005 discharges on an intermittent and flow variable basis, the discharge is screened using acute freshwater criteria only. There is no mixing zone or zone of initial dilution (ZID) for this discharge directly to an intermittent stream; acute freshwater criteria apply at the end of pipe. Chronic freshwater criteria are applied in the perennial freshwater stream.

For the intermittent stream, the percent effluent for acute protection of aquatic life is 100% since the 7Q2 of the intermittent stream is 0.0 cfs. This effluent percentage also provides acute protection of aquatic life in the perennial stream. TCEQ uses the mass balance equation to estimate dilution in the perennial stream during critical conditions. The estimated dilution for chronic protection of aquatic life is calculated using the two-year maximum monthly average flow of 2.25 MGD and the 7-day, 2-year (7Q2) flow of 0.36 cfs for Hatley Creek, the perennial stream. The following critical effluent percentages are being used:

Acute Effluent %: 100% Chronic Effluent %: 67.4%

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

v. Outfall 006

There is no mixing zone or zone of initial dilution (ZID) for this discharge directly to an intermittent stream; acute freshwater criteria apply at the end of pipe. Chronic freshwater criteria are applied in the perennial freshwater stream.

For the intermittent stream, the percent effluent for acute protection of aquatic life is 100% since the 7Q2 of the intermittent stream is 0.0 cfs. This effluent percentage also provides acute protection of aquatic life in the perennial stream. TCEQ uses the mass balance equation to estimate dilution in the perennial stream during critical conditions. The estimated dilution for chronic protection of aquatic life is calculated using the two-year maximum monthly average flow of 2.25 MGD and the 7-day, 2-year (7Q2) flow of 0.36 cfs for Hatley Creek, the perennial stream. The following critical effluent percentages are being used:

Acute Effluent %:	100%	Chronic Effluent %:	94.4%
-------------------	------	---------------------	-------

Wasteload allocations (WLAs) are calculated using the above estimated effluent percentages, criteria outlined in the Texas Surface Water Quality Standards, and partitioning coefficients for metals (when appropriate and designated in the implementation procedures). The WLA is the end-of-pipe effluent concentration which can be discharged, when after mixing in the receiving stream, instream numerical criteria will not be exceeded. From the WLA, a long term average (LTA) is calculated using a log normal probability distribution, a given coefficient of variation (0.6), and a 99th percentile confidence level for Outfall 002 discharge to Brandy Branch Reservoir. From the WLA, a long term average (LTA) is calculated using a log normal probability distribution, a given coefficient of variation (0.6), and a 90th percentile confidence level for Outfall 006 discharge to Hatley Creek. The LTA is the long term average effluent concentration for which the WLA will never be exceeded using a selected percentile confidence level. The lower of the two LTAs (acute and chronic) is used to calculate a daily average and daily maximum effluent limitation for the protection of aquatic life using the same statistical considerations with the 99th percentile confidence level and a standard number of monthly effluent samples collected (12). Assumptions used in deriving the effluent limitations include segment values for hardness, chlorides, pH and Total Suspended Solids (TSS) according to the segment-specific values contained in the TCEQ guidance document, "Procedures to Implement the Texas Surface Water Quality Standards." The segment values are 400 mg/l CaCO₃ for hardness, 175 mg/l Chlorides, 6.0 - 8.5 standard units for pH, and 16 mg/l for TSS. For additional details on the calculation of water quality-based effluent limitations, refer to the TCEQ guidance document.

TCEQ practice for determining significant potential is to compare the reported analytical data against percentages of the calculated daily average water quality-based effluent limitation. Permit limitations are required when analytical data reported in the application exceeds 85 percent of the calculated daily average water quality-based effluent limitation. Monitoring and reporting is required

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

when analytical data reported in the application exceeds 70 percent of the calculated daily average water quality-based effluent limitation.

(b) PERMIT ACTION

Analytical data reported for Outfalls 002 and 006 in the application were screened against calculated water quality-based effluent limitations for the protection of aquatic life. Reported analytical data does not exceed 70 percent of the calculated daily average water quality-based effluent limitation for aquatic life protection.

The current permit includes effluent limitations for total selenium at Outfalls 003, 004 and 006. The effluent limitations calculated in Appendix B of this fact sheet for total selenium at Outfalls 003 and 004 are equivalent to those in the existing permit and are continued in the draft permit. Effluent limitations calculated in Appendix B of this fact sheet for Outfall 006 are the same as those in the existing permit. The effluent limitations are continued in the draft permit.

The following permit limitations and/or monitoring/requirements are continued in the draft permit for aquatic life protection:

<u>Outfall No.</u>	<u>Parameter</u>	<u>Daily Avg.</u>	<u>Daily Max.</u>
003	Selenium, Total	N/A	0.033 mg/l
004	Selenium, Total	N/A	0.036 mg/l
006	Selenium, Total	0.006 mg/l	0.013 mg/l

See Appendix B of this fact sheet for calculation of water quality-based effluent limitations for aquatic life protection. For more details on the calculation of water quality-based effluent limitations, see the TCEQ guidance document "Procedures to Implement the Texas Surface Water Quality Standards" and EPA's "Technical Support Document For Water Quality-based Toxics Control".

3. AQUATIC ORGANISM TOXICITY CRITERIA (7-DAY CHRONIC)

a. SCREENING

The existing permit includes chronic freshwater biomonitoring requirements at Outfall 002. There have been no apparent toxicity problems during the current permit term. Analytical data submitted with the application does not indicate violation of any numerical water quality-based effluent limitation for aquatic life protection, therefore minimum chronic freshwater biomonitoring conditions required for EPA classified major facilities are proposed in the draft permit as outlined below.

b. PERMIT ACTION

The provisions of this section apply to Outfall 002, Chronic.

Based on information contained in the permit application, TCEQ has determined that there may be pollutants present in the effluent(s) which may

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

have the potential to cause toxic conditions in the receiving stream.

Whole effluent biomonitoring is the most direct measure of potential toxicity which incorporates the effects of synergism of effluent components and receiving stream water quality characteristics. Biomonitoring of the effluent is, therefore, required as a condition of this permit to assess potential toxicity. The biomonitoring procedures stipulated as a condition of this permit are as follows:

- i) Chronic static renewal 7-day survival and reproduction test using the water flea (Ceriodaphnia dubia) (Method 1002.0). The frequency of the testing is once per quarter.
- ii) Chronic static renewal 7-day larval survival and growth test using the fathead minnow (Pimephales promelas) (Method 1001.0). The frequency of the testing is once per quarter.

Toxicity tests shall be performed in accordance with protocols described in the latest revision of the "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Third Edition," EPA-600-4-91-002. The stipulated test species are appropriate to measure the toxicity of the effluent consistent with the requirements of the state water quality standards. The biomonitoring frequency has been established to reflect the likelihood of ambient toxicity and to provide data representative of the toxic potential of the facility's discharge.

If the permittee performs four consecutive quarterly tests in which neither test species demonstrates a significant lethality at or below the critical dilution, then the permittee may submit this information in writing and, upon written approval from the Water Quality Standards Team, reduce the testing frequency to once per six months for the invertebrate test species and once per year for the vertebrate test species. This monitoring frequency reduction applies only until the expiration date of this permit, at which time the monitoring frequency for both test species reverts to once per quarter until the permit is re-issued.

This permit may be reopened to require effluent limits, additional testing, and/or other appropriate actions to address toxicity if biomonitoring data show actual or potential ambient toxicity to be the result of the permittee's discharge to the receiving stream or water body.

c. DILUTION SERIES

The permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests. These additional effluent concentrations shall be 32%, 42%, 56%, 75%, and 100%. The low-flow effluent concentration (critical dilution) is defined as 100% effluent.

The dilution series outlined above was calculated using a 0.75 factor applied to the critical dilution. The critical dilution is the estimated effluent dilution at the edge of the aquatic life mixing zone which is calculated in section X.D.2.a. of this fact sheet.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

4. AQUATIC ORGANISM TOXICITY CRITERIA (24 - HOUR ACUTE)a. SCREENING

The existing permit includes 24-hour acute freshwater biomonitoring language for Outfall 002. A review of the whole effluent toxicity testing database indicates that in the past five years the permittee has performed eighteen 24-hour acute tests, with no demonstrations of significant mortality. Minimum 24-hour acute freshwater biomonitoring requirements are proposed in the draft permit as outlined below.

b. PERMIT ACTION

24-hour 100% acute biomonitoring tests are required at Outfall 002 at a frequency of once per six months for the life of the permit.

The biomonitoring procedures stipulated as a condition of this permit are as follows:

- i) Acute 24-hour static toxicity test using the water flea (Daphnia pulex). A minimum of five (5) replicates with eight (8) organisms per replicate shall be used for this test.
- ii) Acute 24-hour static toxicity test using the fathead minnow (Pimephales promelas). A minimum of five (5) replicates with eight (8) organisms per replicate shall be used for this test.

AQUATIC ORGANISM BIOACCUMULATION CRITERIA(a) SCREENING

Water quality-based effluent limitations for the protection of human health are calculated using criteria for the consumption of freshwater fish tissue found in Table 3 of the Texas Surface Water Quality Standards (30 TAC Chapter 307). The intermittent flow variable discharges at Outfalls 003, 004 and 005 and discharges from internal Outfalls 102, 202, and 302 are not subject to screening against water quality-based effluent limitations.

i. Outfall 002

Freshwater fish tissue bioaccumulation criteria are applied at the edge of the human health mixing zone for discharges into lakes and reservoirs. The human health mixing zone for this discharge is defined as a 200-foot radius from the point where the discharge enters Brandy Branch Reservoir. TCEQ uses the EPA horizontal jet plume model to estimate dilution at the edge of the human health mixing zone for discharges greater than 10 MGD into lakes or reservoirs and/or discharges into sections of lakes or reservoirs that are less than 200 feet wide. General assumptions used in the horizontal jet plume model are: a non-buoyant discharge, a submersed pipe, and no cross flow. Based on this analysis,

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

the following critical effluent percentage is calculated based on the permitted flow greater than 100 MGD:

Human Health Effluent %: 100%

ii Outfall 006

Water quality-based effluent limitations for the protection of human health are calculated using criteria for the consumption of freshwater fish tissue found in Table 3 of the Texas Surface Water Quality Standards (30 TAC Chapter 307). Freshwater fish tissue bioaccumulation criteria are applied for human health protection in the perennial stream. TCEQ uses the mass balance equation to estimate dilution in the perennial stream during average flow conditions. The estimated dilution for human health protection is calculated using the two year monthly average effluent flow of 1.51 MGD and the harmonic mean flow of 0.52 cfs for unnamed tributaries of Hatley Creek. The following critical effluent percentage is being used:

Human Health Effluent %: 81.8%

Water quality-based effluent limitations for human health protection against the consumption of fish tissue are calculated using the same procedure as outlined for calculation of water quality-based effluent limitations for aquatic life protection. A 99th percentile confidence level in the long term average calculation is used with only one long term average value being calculated.

Significant potential is again determined by comparing reported analytical data against 70 percent and 85 percent of the calculated daily average water quality-based effluent limitation.

(b) PERMIT ACTION

Reported analytical data does not exceed 70 percent of the calculated daily average water quality-based effluent limitation for human health protection.

6. DRINKING WATER SUPPLY PROTECTION

a. SCREENING

Water Quality Segment No. 0505 which receives the discharge(s) from this facility is designated as a public water supply. An identical screening procedure is used to calculate water quality-based effluent limitations and determine the need for effluent limitations or monitoring requirements as outlined in section X.D.5.a of this fact sheet. Criteria used in the calculation of water quality-based effluent limitations for the protection of a drinking water supply are outlined in Table 3 (Water and Fish) of the Texas Surface Water Quality Standards (30 TAC Chapter 307). These criteria are developed from either drinking water maximum contaminant level (MCL) criteria outlined in 30 TAC Chapter 290, or from the combined human health effects of exposure to consumption of fish

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

tissue and ingestion of drinking water.

b. PERMIT ACTION

Criteria in the "Water and Fish" section of Table 3 do not distinguish if the criteria are based on a drinking water standard or the combined effects of ingestion of drinking water and fish tissue. Effluent limitations or monitoring requirements to protect the drinking water supply (and other human health effects) were previously calculated and outlined in section X.D.5.b of this fact sheet.

XI. PRETREATMENT REQUIREMENTS

This facility is not defined as a publicly owned treatment works (POTW). Pretreatment requirements are not proposed in the draft permit.

XII. VARIANCE REQUESTS

No variance requests have been received.

XIII. PROCEDURES FOR FINAL DECISION

When an application is declared administratively complete, the Chief Clerk sends a letter to the applicant advising the applicant to publish the Notice of Receipt of Application and Intent to Obtain Permit in the newspaper. In addition, the Chief Clerk instructs the applicant to place a copy of the application in a public place for review and copying in the county where the facility is or will be located. This application will be in a public place throughout the comment period. The Chief Clerk also mails this notice to any interested persons and, if required, to landowners identified in the permit application. This notice informs the public about the application, and provides that an interested person may file comments on the application or request a contested case hearing or a public meeting.

Once a draft permit is completed, it is sent, along with the Executive Director's preliminary decision, as contained in the technical summary or fact sheet, to the Chief Clerk. At that time, Notice of Application and Preliminary Decision will be mailed to the same people and published in the same newspaper as the prior notice. This notice sets a deadline for making public comments. The applicant must place a copy of the Executive Director's preliminary decision and draft permit in the public place with the application. This notice sets a deadline for public comment.

Any interested person may request a public meeting on the application until the deadline for filing public comments. A public meeting is intended for the taking of public comment, and is not a contested case proceeding.

After the public comment deadline, the Executive Director prepares a response to all significant public comments on the application or the draft permit raised during the public comment period. The Chief Clerk then mails the Executive Director's Response to Comments and Final Decision to people who have filed comments, requested a contested case hearing, or requested to be on the mailing list. This notice provides that if a person is not satisfied with the Executive Director's response and decision, they can request a contested case hearing or file a request to reconsider the Executive Director's decision within 30 days after the notice is mailed.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

The Executive Director will issue the permit unless a written hearing request or request for reconsideration is filed within 30 days after the Executive Director's Response to Comments and Final Decision is mailed. If a hearing request or request for reconsideration is filed, the Executive Director will not issue the permit and will forward the application and request to the TCEQ Commissioners for their consideration at a scheduled Commission meeting. If a contested case hearing is held, it will be a legal proceeding similar to a civil trial in state district court.

If the Executive Director calls a public meeting or the Commission grants a contested case hearing as described above, the Commission will give notice of the date, time, and place of the meeting or hearing. If a hearing request or request for reconsideration is made, the Commission will consider all public comments in making its decision and shall either adopt the Executive Director's response to public comments or prepare its own response.

XIV. ADMINISTRATIVE RECORD

The following section is a list of the fact sheet citations to applicable statutory or regulatory provisions and appropriate supporting references.

A. PERMIT

TPDES Permit No. WQ0002496000 (TX0087726) issued on August 22, 2003

B. APPLICATION

TCEQ wastewater permit application received August 31, 2006.

C. 40 CFR CITATION(S)

40 CFR Part 122

40 CFR Part 125

40 CFR Part 423

D. LETTERS/MEMORANDA/RECORDS OF COMMUNICATION

Interoffice memorandum from Michael Pfeil, Water Quality Standards Team to the Industrial Permits Team, dated November 2, 2006.

Interoffice memorandum from Mark A Rudolph, P.E., Water Quality Assessment Team to the Industrial Permits Team, dated October 6, 2006.

Interoffice memorandum from Kenda Smith, Water Quality Assessment Team to the Industrial Permits Team, dated October 5, 2006.

Interoffice memorandum from David Flores, Water Quality Standards Team to the Industrial Permits Team, dated October 3, 2006.

Letter from Laurie Lancaster, Application Review and Processing Team to Franklin L. Mills, American Electric Power, dated October 2, 2006.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

E. MISCELLANEOUS

Quality Criteria for Water (1986), EPA 440/5-86-001, 5/1/86.

The State of Texas Water Quality Inventory, 13th Edition, Publication No. SFR-50, Texas Commission on Environmental Quality, December 1996.

Texas Surface Water Quality Standards, 30 TAC Sections 307.1 - 307.10 (21 TexReg 9765, 4/30/97), and Appendix E, effective February 27, 2002.

"Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fourth Edition," EPA/600/4-90/027F.

"Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Third Edition," EPA-600-4-91-002.

"Procedures to Implement the Texas Surface Water Quality Standards," Texas Commission on Environmental Quality, January 2003.

"TCEQ Guidance Document for Establishing Monitoring Frequencies for Domestic and Industrial Wastewater Discharge Permits," TCEQ Document No. 98-001.000-OWR-WQ, May 1998.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

APPENDIX A
CALCULATED TECHNOLOGY BASED EFFLUENT LIMITATIONS

Outfall 002

The discharge at Outfall 002 consists of once through cooling water (once through condenser water and once through miscellaneous cooling water) and previously monitored effluent. Previously monitored effluent consists of low volume wastewater permitted at internal Outfall 102; the discharge of Plant "X" treated effluent at internal Outfall 202; and domestic wastewater permitted at internal Outfall 302. Technology-based effluent limitations are applied to the discharges of low volume wastewater, Plant "X" treated effluent, and treated domestic wastewater at internal Outfalls 102, 202, and 302, respectively.

The discharge of once-through cooling water is subject to categorical guidelines in 40 CFR Part 423 (Steam Electric Power Generating Point Source Category). Because the discharge of once-through cooling water comprises over 99% of the discharge at Outfall 002, effluent limitations applicable to once-through cooling water are applied to the outfall as a whole.

Technology-based effluent limitations are listed as follows:

BAT (40 CFR §423.13)

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Residual Chlorine	N/A	0.2 mg/l

- * Total residual chlorine may not be discharged from any single generating unit for more than two hours per day.

Mass based effluent limitations were calculated as follows:

$$\frac{\text{Total Residual Chlorine}}{\text{Daily Maximum}} = \frac{[0.2 \text{ mg/l}][8.345][632.9 \text{ MGD}]}{12} = 88.03 \text{ lbs/day}$$

The concentration limitation is multiplied by a conversion factor, then by the two year high daily average flow. The result is divided by twelve due to limitations on the period of time and number of operating units.

Monitoring Requirements are established for temperature based on best professional judgement.

The technology-based effluent limitations outlined above are equal to those included in the current permit, and are continued in the draft permit as follows:

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Residual Chlorine	N/A	0.2 mg/L
	N/A	88.03 lbs/day
Temperature (°F)	(Report)	(122)

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Outfall 102

The discharge at Outfall 102 consists of low volume wastes (demineralizer regenerant and floor/yard drains) is subject to categorical guidelines in 40 CFR Part 423 (Steam Electric Power Generating Point Source Category).

Technology-based effluent limitations are listed as follows:

BPT (40 CFR §423.12)

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	30 mg/L	100 mg/L
Oil and Grease	15 mg/L	20 mg/L
pH	Between 6.0 and 9.0 standard units	

Effluent limitations and monitoring requirements are established for total selenium based upon best professional judgement and the use of lignite as a fuel.

The technology-based effluent limitations outlined above are equal to those included in the current permit, and are continued in the draft permit as follows:

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	30 mg/l	100 mg/l
Oil and Grease	15 mg/l	20 mg/l
Selenium, total	0.012 mg/l	0.025 mg/l
pH	Between 6.0 and 9.0 standard units.	

Outfall 202

The discharge at Outfall 202 consists of Plant "X" treated effluent (treated metal cleaning wastes, treated chemical metal cleaning wastes, wastewater from the Lignite Runoff Pond, wastewater from the Flue Gas Desulfurization/Fly Ash Sludge Landfill Pond, and wastewaters from the Ash Pond. The discharges of metal cleaning wastes, chemical metal cleaning wastes, coal pile runoff (Lignite Runoff Pond), and ash transport water (Ash Pond) are subject to categorical guidelines in 40 CFR Part 423 (Steam Electric Power Generating Point Source Category).

Technology-based effluent limitations are listed for metal cleaning wastes and chemical metal cleaning wastes are as follows:

BPT (40 CFR §423.12)

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	30 mg/l	100 mg/L
Oil and Grease	15 mg/l	20 mg/L
Copper, Total	1.0 mg/l	1.0 mg/L
Iron, Total	1.0 mg/l	1.0 mg/L
pH	Between 6.0 and 9.0 standard units	

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

BAT (40 CFR §423.13)

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Copper, Total	1.0 mg/l	1.0 mg/l
Iron, Total	1.0 mg/l	1.0 mg/l

Technology-based effluent limitations are listed for coal pile runoff are as follows:

BPT (40 CFR §423.12)

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	N/A	50 mg/l
pH	Between 6.0 and 9.0 standard units	

Technology-based effluent limitations are listed for ash transport water are as follows:

BPT (40 CFR §423.12)

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	30 mg/l	100 mg/l
Oil and Grease	15 mg/l	20 mg/l
pH	Between 6.0 and 9.0 standard units	

Technology-based effluent limitations are applied to the total discharge at Outfall 202 as follows:

30 Texas Administrative Code (TAC) 319.22

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Copper, Total	0.5 mg/l	1.0 mg/l

Contributions of metal cleaning waste, chemical metal cleaning waste, coal pile runoff, and ash transport water to Plant "X" are intermittent and flow variable. For this reason, the more stringent of the applicable technology based effluent limitations from each categorical waste stream is applied at Outfall 202 (except daily maximum effluent limitations for total suspended solids). Daily maximum effluent limitations for total suspended solids are established at 100 mg/L. Effluent limitations for total copper and total iron are applicable only when discharging metal cleaning wastes or chemical metal cleaning wastes. Effluent limitations for total selenium are established based upon best professional judgement, and are included as a result of the discharges of coal pile runoff and ash transport water.

The technology-based effluent limitations outlined above are equal to those included in the current permit, and are continued in the draft permit as follows:

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	30 mg/l	100 mg/l
Oil and Grease	15 mg/l	20 mg/l
Selenium, Total	0.016 mg/l	0.033 mg/l
Iron, Total	1.0 mg/l	1.0 mg/l
Copper, Total	0.5 mg/l	1.0 mg/l

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Outfall 302

The discharge at Outfall 302 consists of treated domestic wastewater. The discharge of treated domestic wastewater is not subject to categorical guidelines in 40 CFR Part 423 (Steam Electric Power Generating Point Source Category), but is subject to effluent limitations in 30 Texas Administrative Code Chapter 309.

Technology-based effluent limitations are listed as follows:

30 TAC 309

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	20 mg/l	65 mg/l
Biochemical Oxygen Demand (5-day)	20 mg/l	65 mg/l
Total Residual Chlorine	1.0 mg/l (min)	N/A
pH	Between 6.0 and 9.0 standard units	

The technology-based effluent limitations outlined above are equal to those included in the current permit, and are continued in the draft permit as follows:

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	20 mg/l 2.5 lbs/day	65 mg/l N/A
Biochemical Oxygen Demand (5-day)	20 mg/l 2.5 lbs/day	65 mg/l N/A
Total Residual Chlorine	1.0 mg/l (min)	Report mg/l (max)
pH	Between 6.0 and 9.0 standard units	

Mass based effluent limitations, above are calculated by multiplying the concentration based effluent limitation by the permitted flow and conversion factor of 8.345.

Outfall 003

The discharge at Outfall 003 consists wastewater from the Lignite Runoff Pond (coal pile runoff) is subject to categorical guidelines in 40 CFR Part 423 (Steam Electric Power Generating Point Source Category).

Technology-based effluent limitations are listed as follows:

BPT (40 CFR §423.12)

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	N/A	50 mg/l
pH	Between 6.0 and 9.0 standard units	

Additionally, daily maximum effluent limitations for oil and grease are established in the existing permit at 20 mg/L daily maximum and based on best professional judgement.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

The technology-based effluent limitations outlined above are equal to those included in the current permit, and are continued in the draft permit as follows:

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	N/A	50 mg/l
Oil and Grease	N/A	20 mg/l
pH	Between 6.0 and 9.0 standard units.	

Outfall 004

The discharge at Outfall 004 consists of wastewater from the Flue Gas Desulphurization/Fly Ash Pond (storm water from the Flue Gas Desuphourzation/Fly Ash Landfill and wastewater from the Lignite Runoff Pond). The discharge of wastewater from the Flue Gas Desulphurization/Fly Ash Pond is not subject to categorical guidelines in 40 CFR Part 423 (Steam Electric Power Generating Point Source Category), and the following effluent limitations are continued from the existing permit and based on best professional judgment:

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	N/A	100 mg/l
Oil and Grease	N/A	20 mg/l
pH	Between 6.0 and 9.0 standard units.	

Outfall 005

The discharge at Outfall 005 consists wastewater from the Limestone Runoff Pond. The discharge of storm water from the Limestone Runoff Pond is not subject to categorical guidelines in 40 CFR Part 423 (Steam Electric Power Generating Point Source Category), and the following effluent limitations are continued from the existing permit and based on best professional judgment:

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	N/A	50 mg/l
Oil and Grease	N/A	20 mg/l
pH	Between 6.0 and 9.0 standard units.	

Outfall 006

The discharge at Outfall 006 consists wastewater from the Ash Pond (low volume wastes including boiler blowdown and demineralizer regenerant and ash transport water. The discharges of low volume wastes and ash transport water are subject to categorical guidelines in 40 CFR Part 423 (Steam Electric Power Generating Point Source Category).

Technology-based effluent limitations are listed for low volume wastes and fly ash transport water are as follows:

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

BPT (40 CFR §423.12)

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	30 mg/l	100 mg/l
Oil and Grease	15 mg/l	20 mg/l
pH	Between 6.0 and 9.0 standard units	

The technology-based effluent limitations outlined above are equal to those included in the current permit, and are continued in the draft permit as follows:

<u>Parameter</u>	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	30 mg/l	100 mg/l
Oil and Grease	15 mg/l	20 mg/l
pH	Between 6.0 and 9.0 standard units.	

OTHER REQUIREMENTS

Definitions for 10 year, 24 hour rainfall event, total residual chlorine, ash transport water, low volume wastes, metal cleaning wastes, chemical metal cleaning wastes, once through cooling water, and coal pile runoff are included in the draft permit as defined by 40 CFR 423.11.

An "Other Requirement" prohibiting the discharge of polychlorinated biphenyl compounds is included in the permit as required by 40 CFR 423.12(b)(2) and 423.13(a).

An "Other Requirement" prohibiting the discharged from any single generating unit for more than two hours per day (unless the discharger demonstrates to the TCEQ that discharge for more than two hours is required for macroinvertebrate control) is included in the permit as required by 40 CFR 423.12(b)(8) and 423.13(d)(2).

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

APPENDIX B
CALCULATED WATER QUALITY BASED EFFLUENT LIMITATION

TEXTOX MENU #4 - LAKE OR RESERVOIR

The water quality-based effluent limitations demonstrated below are calculated using:

- Table 1, 1997 Texas Surface Water Quality Standards (30 TAC 307) for Freshwater Aquatic Life
- Table 3, 2000 Texas Surface Water Quality Standards for Human Health
- "Procedures to Implement the Texas Surface Water Quality Standards," Texas Commission on Environmental Quality, January 2003.

PERMITTEE INFORMATION:

Permittee Name:	Southwestern Electric Power Company
TPDES Permit No:	WQ0002496000
Outfall No:	002
Prepared By:	ONYENOBI, John
Date:	November 17, 2006

DISCHARGE INFORMATION:

Immediate Receiving Waterbody:	Brandy Branch Reservoir
Segment No:	0505
TSS:	16
pH:	6.7
Hardness:	41
Chloride:	42
Effluent Flow for Aquatic Life (MGD)	>100
Chronic Effluent % for Aquatic Life:	100
Acute Effluent % for Aquatic Life:	100
Effluent Flow for Human Health (MGD):	>100
Human Health Effluent %:	100
Public Water Supply Use?:	Yes

CALCULATE TOTAL/DISSOLVED RATIO:

Lake Metal	Intercept (b)	Slope (m)	Partition Coefficient (K _{po})	Dissolved Fraction (C _d /C _t)		Water Effects Ratio (WER)	
Aluminum	N/A	N/A	N/A	1.00	Assumed	1	Assumed
Arsenic	5.68	-0.73	63240.080	0.50		1	Assumed
Cadmium	6.55	-0.92	276827.746	0.18		1	Assumed
Chromium (Total)	6.34	-0.27	1034874.307	0.06		1	Assumed
Chromium (+3)	6.34	-0.27	1034874.307	0.06		1	Assumed
Chromium (+6)	N/A	N/A	N/A	1.00	Assumed	1	Assumed
Copper	6.45	-0.90	232429.911	0.21		1	Assumed
Lead	6.31	-0.53	469695.511	0.12		1	Assumed
Mercury	N/A	N/A	N/A	1.00	Assumed	1	Assumed
Nickel	6.34	-0.76	265992.146	0.19		1	Assumed
Selenium	N/A	N/A	N/A	1.00	Assumed	1	Assumed
Silver	6.38	-1.03	137961.027	0.31		1	Assumed
Zinc	6.52	-0.68	502572.142	0.11		1	Assumed

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

AQUATIC LIFE

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS

Parameter	Acute Standard (ug/L)	Chronic Standard (ug/L)	WLAa	WLAc	LTAa	LTAc	Daily Avg. (ug/L)	Daily Max. (ug/L)
Aldrin	3.0	N/A	3.000	N/A	0.960	N/A	1.411	2.986
Aluminum ^d	991	N/A	991.000	N/A	317.120	N/A	466.166	986.243
Arsenic ^d	360	190	724.263	382.250	231.764	233.172	340.693	720.786
Cadmium ^d	12.324	0.56321	66.907	3.058	21.410	1.865	2.742	5.801
Carbaryl	2.0	N/A	2.000	N/A	0.640	N/A	0.941	1.990
Chlordane	2.4	0.0043	2.400	0.004	0.768	0.003	0.004	0.008
Chlorpyrifos	0.083	0.041	0.083	0.041	0.027	0.025	0.037	0.078
Chromium (+3) ^d	836.658	99.725	14690.03	1750.969	4700.811	1068.091	1570.094	3321.763
Chromium (+6) ^d	16	11	16.000	11.000	5.120	6.710	7.526	15.923
Copper ^d	8.286	5.973	39.099	28.186	12.512	17.193	18.392	38.911
Cyanide (free)	45.78	10.69	45.780	10.690	14.650	6.521	9.586	20.280
4,4'-DDT	1.1	0.001	1.100	0.001	0.352	0.001	0.001	0.002
Dementon	N/A	0.1	N/A	0.100	N/A	0.061	0.090	0.190
Dicofol	59.3	19.8	59.300	19.800	18.976	12.078	17.755	37.563
Dieldrin	2.5	0.0019	2.500	0.002	0.800	0.001	0.002	0.004
Diuron	210	70	210.000	70.000	67.200	42.700	62.769	132.797
Endosulfan I (alpha)	0.22	0.056	0.220	0.056	0.070	0.034	0.050	0.106
Endosulfan II (beta)	0.22	0.056	0.220	0.056	0.070	0.034	0.050	0.106
Endosulfan sulfate	0.22	0.056	0.220	0.056	0.070	0.034	0.050	0.106
Endrin	0.18	0.0023	0.180	0.002	0.058	0.001	0.002	0.004
Guthion	N/A	0.01	N/A	0.010	N/A	0.006	0.009	0.019
Heptachlor	0.52	0.0038	0.520	0.004	0.166	0.002	0.003	0.007
Hexachlorocyclohexane (Lindane)	2.0	0.08	2.000	0.080	0.640	0.049	0.072	0.152
Lead ^d	26.242	1.023	223.458	8.708	71.506	5.312	7.808	16.520
Malathion	N/A	0.01	N/A	0.010	N/A	0.006	0.009	0.019
Mercury	2.4	1.3	2.400	1.300	0.768	0.793	1.129	2.388
Methoxychlor	N/A	0.03	N/A	0.030	N/A	0.018	0.027	0.057
Mirex	N/A	0.001	N/A	0.001	N/A	0.001	0.001	0.002
Nickel ^d	667.061	74.157	3505.990	389.759	1121.917	237.753	349.497	739.412
Parathion (ethyl)	0.065	0.013	0.065	0.013	0.021	0.008	0.012	0.025
Pentachlorophenol	6.709	4.235	6.709	4.235	2.147	2.584	3.156	6.677
Phenanthrene	30	30	30.000	30.000	9.600	18.300	14.112	29.856
Polychlorinated Biphenyls (PCBs)	2.0	0.014	2.000	0.014	0.640	0.009	0.013	0.027
Selenium	20	5	20.000	5.000	6.400	3.050	4.484	9.486
Silver, (free ion)	0.92	N/A	11.044	N/A	3.534	N/A	5.195	10.991
Toxaphene	0.78	0.0002	0.780	0.0002	0.250	0.0001	0.0002	0.0004
Tributyltin (TBT)	0.13	0.024	0.130	0.024	0.042	0.015	0.022	0.046
2,4,5 Trichlorophenol	136	64	136.000	64.000	43.520	39.040	57.389	121.414
Zinc ^d	54.977	49.795	497.053	450.202	159.057	274.623	233.814	494.667

HUMAN HEALTH

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS

Parameter	Water and FW Fish (ug/L)	FW Fish Only (ug/L)	WLAh	LTAh	Daily Avg. (ug/L)	Daily Max. (ug/L)
Acrylonitrile	1.28	10.9	1.280	1.190	1.750	3.702
Aldrin	0.00408	0.00426	0.004	0.004	0.006	0.012
Arsenic ^d	50	N/A	100.592	93.551	137.519	290.942

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Parameter	Water and FW Fish (ug/L)	FW Fish Only (ug/L)	WLAh	LTAh	Daily Avg. (ug/L)	Daily Max. (ug/L)
Barium ^d	2000	N/A	2000.000	1860.000	2734.200	5784.600
Benzene	5	106	5.000	4.650	6.836	14.462
Benzidine	0.00106	0.00347	0.001	0.001	0.001	0.003
Benzo(a)anthracene	0.099	0.810	0.099	0.092	0.135	0.286
Benzo(a)pyrene	0.099	0.810	0.099	0.092	0.135	0.286
Bis(chloromethyl)ether	0.00462	0.0193	0.005	0.004	0.006	0.013
Cadmium ^d	5	N/A	27.146	25.246	37.112	78.515
Carbon Tetrachloride	3.76	8.4	3.760	3.497	5.140	10.875
Chlordane	0.0210	0.0213	0.021	0.020	0.029	0.061
Chlorobenzene	776	1380	776.000	721.680	1060.870	2244.425
Chloroform	100	1292	100.000	93.000	136.710	289.230
Chromium ^d	100	3320	1755.799	1632.893	2400.353	5078.297
Chrysene	0.417	8.1	0.417	0.388	0.570	1.206
Cresols	3313	13116	3313.000	3081.090	4529.202	9582.190
Cyanide (free)	200	N/A	200.000	186.000	273.420	578.460
4,4'-DDD	0.0103	0.010	0.010	0.010	0.014	0.030
4,4'-DDE	0.00730	0.007	0.007	0.007	0.010	0.021
4,4'-DDT	0.00730	0.007	0.007	0.007	0.010	0.021
2,4'-D	70	N/A	70.000	65.100	95.697	202.461
Danitol	0.709	0.721	0.709	0.659	0.969	2.051
Dibromochloromethane	9.20	71.6	9.200	8.556	12.577	26.609
1,2-Dibromoethane	0.014	0.335	0.014	0.013	0.019	0.040
1,3-Dichloropropene (1,3-Dichloropropylene)	22.8	161	22.800	21.204	31.170	65.944
Dieldrin	0.00171	0.002	0.002	0.002	0.002	0.005
p-Dichlorobenzene	75	N/A	75.000	69.750	102.533	216.923
1,2-Dichloroethane	5	73.9	5.000	4.650	6.836	14.462
1,1-Dichloroethylene	1.63	5.84	1.630	1.516	2.228	4.714
Dicofol	0.215	0.217	0.215	0.200	0.294	0.622
Dioxins/Furans (TCDD Equivalents)	1.34e-07	1.40e-07	1.34e-07	1.25e-07	1.83e-07	3.88e-07
Endrin	1.27	1.34	1.270	1.181	1.736	3.673
Fluoride	4000	N/A	4000.000	3720.000	5468.400	11569.200
Heptachlor	0.00260	0.00265	0.003	0.002	0.004	0.008
Heptachlor Epoxide	0.159	1.1	0.159	0.148	0.217	0.460
Hexachlorobenzene	0.0194	0.0198	0.019	0.018	0.027	0.056
Hexachlorobutadiene	2.99	3.6	2.990	2.781	4.088	8.648
Hexachlorocyclohexane (alpha)	0.163	0.413	0.163	0.152	0.223	0.471
Hexachlorocyclohexane (beta)	0.570	1.45	0.570	0.530	0.779	1.649
Hexachlorocyclohexane (gamma) (Lindane)	0.2	2.00	0.200	0.186	0.273	0.578
Hexachloroethane	84.2	278	84.200	78.306	115.110	243.532
Hexachlorophene	0.0531	0.053	0.053	0.049	0.073	0.154
Lead ^d	4.98	25.3	42.405	39.437	57.972	122.649
Mercury	0.0122	0.0122	0.012	0.011	0.017	0.035
Methoxycor	2.21	2.22	2.210	2.055	3.021	6.392
Methyl Ethyl Ketone	5.29e+04	9.94e+06	5.29e+04	4.92e+04	7.23e+04	1.53e+05
Nitrate-Nitrogen (as Total Nitrogen)	10000	N/A	10000.000	9300.000	13671.000	28923.000
Nitrobenzene	37.3	233	37.300	34.689	50.993	107.883
N-Nitrosodiethylamine	0.0382	7.68	0.038	0.036	0.052	0.110
N-Nitroso-di-n-Butylamine	1.84	13.5	1.840	1.711	2.515	5.322
PCB's (Polychlorinated Biphenyls)	1.30e-03	1.30e-03	1.30e-03	1.21e-03	1.78e-03	3.76e-03
Pentachlorobenzene	6.10	6.68	6.100	5.673	8.339	17.643
Pentachlorophenol	1.0	135	1.000	0.930	1.367	2.892
Pyridine	88.1	13333	88.100	81.933	120.442	254.812

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Parameter	Water and FW Fish (ug/L)	FW Fish Only (ug/L)	WLAh	LTAh	Daily Avg. (ug/L)	Daily Max. (ug/L)
Selenium	50	N/A	50.000	46.500	68.355	144.615
1,2,4,5-Tetrachlorobenzene	0.241	0.243	0.241	0.224	0.329	0.697
Tetrachloroethylene	5	323	5.000	4.650	6.836	14.462
Toxaphene	0.005	0.014	0.005	0.005	0.007	0.014
2,4,5-TP (Silvex)	47.0	50.3	47.000	43.710	64.254	135.938
2,4,5-Trichlorophenol	953	1069	953.000	886.290	1302.846	2756.362
Trichloroethylene	5	612	5.000	4.650	6.836	14.462
1,1,1-Trichloroethane	200	12586	200.000	186.000	273.420	578.460
TTHM (Sum of Total Trihalomethanes)	100	N/A	100.000	93.000	136.710	289.230
Vinyl Chloride	2	415	2.000	1.860	2.734	5.785

CALCULATE 70% AND 85% OF DAILY AVERAGE EFFLUENT LIMITATIONS

Parameter	70%	85%
<i>Aquatic Life</i>		
Aldrin	0.988	1.200
Aluminum	326.316	396.241
Arsenic	238.485	289.589
Cadmium	1.919	2.331
Carbaryl	0.659	0.800
Chlordane	0.003	0.003
Chlorpyrifos	0.026	0.031
Chromium (+3)	1099.066	1334.580
Chromium (+6)	5.268	6.397
Copper	12.875	15.633
Cyanide (free)	6.710	8.148
4,4'-DDT	0.001	0.001
Dementon	0.063	0.076
Dicofol	12.428	15.091
Dieldrin	0.001	0.001
Diuron	43.938	53.354
Endosulfan (alpha)	0.035	0.043
Endosulfan (beta)	0.035	0.043
Endosulfan sulfate	0.035	0.043
Endrin	0.001	0.002
Guthion	0.006	0.008
Heptachlor	0.002	0.003
Hexachlorocyclohexane (Lindane)	0.050	0.061
Lead	5.466	6.637
Malathion	0.006	0.008
Mercury	0.790	0.960
Methoxychlor	0.019	0.023
Mirex	0.001	0.001
Nickel	244.648	297.072
Parathion (ethyl)	0.008	0.010
Pentachlorophenol	2.209	2.683
Phenanthrene	9.878	11.995
Polychlorinated Biphenyls (PCBs)	0.009	0.011
Selenium	3.138	3.811
Silver, (free ion)	3.636	4.416
Toxaphene	0.0001	0.0002

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Parameter	70%	85%
Tributyltin (TBT)	0.015	0.018
2,4,5 Trichlorophenol	40.172	48.780
Zinc	163.670	198.742
<i>Human Health</i>		
Acrylonitrile	1.225	1.487
Aldrin	0.004	0.005
Arsenic	96.264	116.892
Barium	1913.940	2324.070
Benzene	4.785	5.810
Benzidine	0.001	0.001
Benzo(a)anthracene	0.095	0.115
Benzo(a)pyrene	0.095	0.115
Bis(chloromethyl)ether	0.004	0.005
Cadmium	25.978	31.545
Carbon Tetrachloride	3.598	4.369
Chlordane	0.020	0.024
Chlorobenzene	742.609	901.739
Chloroform	95.697	116.204
Chromium	1680.247	2040.300
Chrysene	0.399	0.485
Cresols	3170.442	3849.822
Cyanide (free)	191.394	232.407
4,4'-DDD	0.010	0.012
4,4'-DDE	0.007	0.008
4,4'-DDT	0.007	0.008
4,4'-D	66.988	81.342
Danitol	0.678	0.824
Dibromochloromethane	8.804	10.691
1,2-Dibromoethane	0.013	0.016
1,3-Dichloropropene (1,3-Dichloropropylene)	21.819	26.494
Dieldrin	0.002	0.002
p-Dichlorobenzene	71.773	87.153
1,2-Dichloroethane	4.785	5.810
1,1-Dichloroethylene	1.560	1.894
Dicofol	0.206	0.250
Dioxins/Furans (TCDD Equivalents)	1.28e-07	1.56e-07
Endrin	1.215	1.476
Fluoride	3827.880	4648.140
Heptachlor	0.002	0.003
Heptachlor Epoxide	0.152	0.185
Hexachlorobenzene	0.019	0.023
Hexachlorobutadiene	2.861	3.474
Hexachlorocyclohexane (alpha)	0.156	0.189
Hexachlorocyclohexane (beta)	0.545	0.662
Hexachlorocyclohexane (gamma) (Lindane)	0.191	0.232
Hexachloroethane	80.577	97.843
Hexachlorophene	0.051	0.062
Lead	40.581	49.276
Mercury	0.012	0.014
Methoxychlor	2.115	2.568
Methyl Ethyl Ketone	5.06e+04	6.15e+04

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Parameter	70%	85%
Nitrate-Nitrogen (as Total Nitrogen)	9569.700	11620.350
Nitrobenzene	35.695	43.344
<i>N</i> -Nitrosodiethylamine	0.037	0.044
<i>N</i> -Nitroso-di- <i>n</i> -Butylamine	1.761	2.138
PCB's (Polychlorinated Biphenyls)	1.24e-03	1.51e-03
Pentachlorobenzene	5.838	7.088
Pentachlorophenol	0.957	1.162
Pyridine	84.309	102.375
Selenium	47.849	58.102
1,2,4,5-Tetrachlorobenzene	0.231	0.280
Tetrachloroethylene	4.785	5.810
Toxaphene	0.005	0.006
2,4,5-TP (Silvex)	44.978	54.616
2,4,5-Trichlorophenol	911.992	1107.419
Trichloroethylene	4.785	5.810
1,1,1-Trichloroethane	191.394	232.407
TTHM (Sum of Total Trihalomethanes)	95.697	116.204
Vinyl Chloride	1.914	2.324

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

TEXTOX MENU #4 - LAKE OR RESERVOIR

The water quality-based effluent limitations demonstrated below are calculated using:

- Table 1, 1997 Texas Surface Water Quality Standards (30 TAC 307) for Freshwater Aquatic Life
- Table 3, 2000 Texas Surface Water Quality Standards for Human Health
- "Procedures to Implement the Texas Surface Water Quality Standards," Texas Commission on Environmental Quality, January 2003.

PERMITTEE INFORMATION:

Permittee Name: Southwestern Electric Power Company
 TPDES Permit No: WQ0002496000
 Outfall No: 003
 Prepared By: ONYENOBI, John
 Date: November 17, 2006

DISCHARGE INFORMATION:

Immediate Receiving Waterbody: Brandy Branch Reservoir
 Segment No: 0505
 TSS: 16
 pH: 6.7
 Hardness: 41
 Chloride: 42
 Effluent Flow for Aquatic Life (MGD): <10
 Chronic Effluent % for Aquatic Life: 15
 Acute Effluent % for Aquatic Life: 60
 Effluent Flow for Human Health (MGD): <10
 Human Health Effluent %: 8
 Public Water Supply Use?: Yes

CALCULATE TOTAL/DISSOLVED RATIO:

Lake Metal	Intercept (b)	Slope (m)	Partition Coefficient (K _{po})	Dissolved Fraction (Cd/Ct)		Water Effects Ratio (WER)	
Aluminum	N/A	N/A	N/A	1.00	Assumed	1	Assumed
Arsenic	5.68	-0.73	63240.080	0.50		1	Assumed
Cadmium	6.55	-0.92	276827.746	0.18		1	Assumed
Chromium (Total)	6.34	-0.27	1034874.307	0.06		1	Assumed
Chromium (+3)	6.34	-0.27	1034874.307	0.06		1	Assumed
Chromium (+6)	N/A	N/A	N/A	1.00	Assumed	1	Assumed
Copper	6.45	-0.90	232429.911	0.21		1	Assumed
Lead	6.31	-0.53	469695.511	0.12		1	Assumed
Mercury	N/A	N/A	N/A	1.00	Assumed	1	Assumed
Nickel	6.34	-0.76	265992.146	0.19		1	Assumed
Selenium	N/A	N/A	N/A	1.00	Assumed	1	Assumed
Silver	6.38	-1.03	137961.027	0.31		1	Assumed
Zinc	6.52	-0.68	502572.142	0.11		1	Assumed

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

AQUATIC LIFE

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS

Parameter	Acute Standard (ug/L)	Chronic Standard (ug/L)	WLAa	WLAc	LTAa	LTAc	Daily Avg. (ug/L)	Daily Max. (ug/L)
Aldrin	3.0	N/A	5.000	N/A	1.600	N/A	2.352	4.976
Aluminum ^d	991	N/A	1651.667	N/A	528.533	N/A	776.944	1643.739
Arsenic ^d	360	190	1207.105	2548.332	386.274	1554.483	567.822	1201.311
Cadmium ^d	12.324	0.56321	111.512	20.385	35.684	12.435	18.280	38.673
Carbaryl	2.0	N/A	3.333	N/A	1.067	N/A	1.568	3.317
Chlordane	2.4	0.0043	4.000	0.029	1.280	0.017	0.026	0.054
Chlorpyrifos	0.083	0.041	0.138	0.273	0.044	0.167	0.065	0.138
Chromium (+3) ^d	836.658	99.725	24483.39	11673.12	7834.685	7120.607	10467.29	22145.08
			0	6			2	7
Chromium (+6) ^d	16	11	26.667	73.333	8.533	44.733	12.544	26.539
Copper ^d	8.286	5.973	65.165	187.905	20.853	114.622	30.654	64.852
Cyanide (free)	45.78	10.69	76.300	71.267	24.416	43.473	35.892	75.934
4,4'-DDT	1.1	0.001	1.833	0.007	0.587	0.004	0.006	0.013
Dementon	N/A	0.1	N/A	0.667	N/A	0.407	0.598	1.265
Dicofol	59.3	19.8	98.833	132.000	31.627	80.520	46.491	98.359
Dieldrin	2.5	0.0019	4.167	0.013	1.333	0.008	0.011	0.024
Diuron	210	70	350.000	466.667	112.000	284.667	164.640	348.320
Endosulfan I (alpha)	0.22	0.056	0.367	0.373	0.117	0.228	0.172	0.365
Endosulfan II (beta)	0.22	0.056	0.367	0.373	0.117	0.228	0.172	0.365
Endosulfan sulfate	0.22	0.056	0.367	0.373	0.117	0.228	0.172	0.365
Endrin	0.18	0.0023	0.300	0.015	0.096	0.009	0.014	0.029
Guthion	N/A	0.01	N/A	0.067	N/A	0.041	0.060	0.126
Heptachlor	0.52	0.0038	0.867	0.025	0.277	0.015	0.023	0.048
Hexachlorocyclohexane (Lindane)	2.0	0.08	3.333	0.133	1.067	0.081	0.120	0.253
Lead ^d	26.242	1.023	372.429	58.052	119.177	35.412	52.055	110.131
Malathion	N/A	0.01	N/A	0.067	N/A	0.041	0.060	0.126
Mercury	2.4	1.3	4.000	8.667	1.280	5.287	1.882	3.981
Methoxychlor	N/A	0.03	N/A	0.200	N/A	0.122	0.179	0.379
Mirex	N/A	0.001	N/A	0.007	N/A	0.004	0.006	0.013
Nickel ^d	667.061	74.157	5843.317	2598.393	1869.862	1585.020	2329.979	4929.411
Parathion (ethyl)	0.065	0.013	0.108	0.087	0.035	0.053	0.051	0.108
Pentachlorophenol	6.709	4.235	11.182	28.237	3.578	17.224	5.260	11.129
Phenanthrene	30	30	50.000	200.000	16.000	122.000	23.520	49.760
Polychlorinated Biphenyls (PCBs)	2.0	0.014	3.333	0.093	1.067	0.057	0.084	0.177
Selenium	20	5	33.333	33.333	10.667	20.333	15.680	33.173
Silver, (free ion)	0.92	N/A	18.406	N/A	5.890	N/A	8.658	18.318
Toxaphene	0.78	0.0002	1.300	0.0013	0.416	0.0008	0.0012	0.0025
Tributyltin (TBT)	0.13	0.024	0.217	0.160	0.069	0.098	0.102	0.216
2,4,5 Trichlorophenol	136	64	226.667	426.667	72.533	260.267	106.624	225.579
Zinc ^d	54.977	49.795	828.422	3001.347	265.095	1830.822	389.689	824.445

HUMAN HEALTH

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS

Parameter	Water and FW Fish (ug/L)	FW Fish Only (ug/L)	WLAh	LTAh	Daily Avg. (ug/L)	Daily Max. (ug/L)
Acrylonitrile	1.28	10.9	16.000	14.880	21.874	46.277
Aldrin	0.00408	0.00426	0.051	0.047	0.070	0.148
Arsenic ^d	50	N/A	1257.401	1169.383	1718.993	3636.780

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Parameter	Water and FW Fish (ug/L)	FW Fish Only (ug/L)	WLAh	LTAh	Daily Avg. (ug/L)	Daily Max. (ug/L)
Barium ^d	2000	N/A	25000.000	23250.000	34177.500	72307.500
Benzene	5	106	62.500	58.125	85.444	180.769
Benzidine	0.00106	0.00347	0.013	0.012	0.018	0.038
Benzo(a)anthracene	0.099	0.810	1.238	1.151	1.692	3.579
Benzo(a)pyrene	0.099	0.810	1.238	1.151	1.692	3.579
Bis(chloromethyl)ether	0.00462	0.0193	0.058	0.054	0.079	0.167
Cadmium ^d	5	N/A	339.328	315.575	463.895	981.438
Carbon Tetrachloride	3.76	8.4	47.000	43.710	64.254	135.938
Chlordane	0.0210	0.0213	0.263	0.244	0.359	0.759
Chlorobenzene	776	1380	9700.000	9021.000	13260.870	28055.310
Chloroform	100	1292	1250.000	1162.500	1708.875	3615.375
Chromium ^d	100	3320	21947.486	20411.162	30004.408	63478.714
Chrysene	0.417	8.1	5.213	4.848	7.126	15.076
Cresols	3313	13116	41412.500	38513.625	56615.029	119777.374
Cyanide (free)	200	N/A	2500.000	2325.000	3417.750	7230.750
4,4'-DDD	0.0103	0.010	0.129	0.120	0.176	0.372
4,4'-DDE	0.00730	0.007	0.091	0.085	0.125	0.264
4,4'-DDT	0.00730	0.007	0.091	0.085	0.125	0.264
2,4'-D	70	N/A	875.000	813.750	1196.213	2530.763
Danitrol	0.709	0.721	8.863	8.242	12.116	25.633
Dibromochloromethane	9.20	71.6	115.000	106.950	157.217	332.615
1,2-Dibromoethane	0.014	0.335	0.175	0.163	0.239	0.506
1,3-Dichloropropene (1,3-Dichloropropylene)	22.8	161	285.000	265.050	389.624	824.306
Dieldrin	0.00171	0.002	0.021	0.020	0.029	0.062
<i>p</i> -Dichlorobenzene	75	N/A	937.500	871.875	1281.656	2711.531
1,2-Dichloroethane	5	73.9	62.500	58.125	85.444	180.769
1,1-Dichloroethylene	1.63	5.84	20.375	18.949	27.855	58.931
Dicofol	0.215	0.217	2.688	2.499	3.674	7.773
Dioxins/Furans (TCDD Equivalents)	1.34e-07	1.40e-07	1.68e-06	1.56e-06	2.29e-06	4.84e-06
Endrin	1.27	1.34	15.875	14.764	21.703	45.915
Fluoride	4000	N/A	50000.000	46500.000	68355.000	144615.000
Heptachlor	0.00260	0.00265	0.033	0.030	0.044	0.094
Heptachlor Epoxide	0.159	1.1	1.988	1.848	2.717	5.748
Hexachlorobenzene	0.0194	0.0198	0.243	0.226	0.332	0.701
Hexachlorobutadiene	2.99	3.6	37.375	34.759	51.095	108.100
Hexachlorocyclohexane (alpha)	0.163	0.413	2.038	1.895	2.785	5.893
Hexachlorocyclohexane (beta)	0.570	1.45	7.125	6.626	9.741	20.608
Hexachlorocyclohexane (gamma) (Lindane)	0.2	2.00	2.500	2.325	3.418	7.231
Hexachloroethane	84.2	278	1052.500	978.825	1438.873	3044.146
Hexachlorophene	0.0531	0.053	0.664	0.617	0.907	1.920
Lead ^d	4.98	25.3	530.067	492.962	724.654	1533.112
Mercury	0.0122	0.0122	0.153	0.142	0.208	0.441
Methoxychlor	2.21	2.22	27.625	25.691	37.766	79.900
Methyl Ethyl Ketone	5.29e+04	9.94e+06	6.61e+05	6.15e+05	9.04e+05	1.91e+06
Nitrate-Nitrogen (as Total Nitrogen)	10000	N/A	125000.000	116250.000	170887.500	361537.500
Nitrobenzene	37.3	233	466.250	433.613	637.410	1348.535
<i>N</i> -Nitrosodiethylamine	0.0382	7.68	0.478	0.444	0.653	1.381
<i>N</i> -Nitroso-di- <i>n</i> -Butylamine	1.84	13.5	23.000	21.390	31.443	66.523
PCB's (Polychlorinated Biphenyls)	1.30e-03	1.30e-03	1.63e-02	1.51e-02	2.22e-02	4.70e-02
Pentachlorobenzene	6.10	6.68	76.250	70.913	104.241	220.538
Pentachlorophenol	1.0	135	12.500	11.625	17.089	36.154
Pyridine	88.1	13333	1101.250	1024.163	1505.519	3185.145

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Parameter	Water and FW Fish (ug/L)	FW Fish Only (ug/L)	WLAh	LTAh	Daily Avg. (ug/L)	Daily Max. (ug/L)
Selenium	50	N/A	625.000	581.250	854.438	1807.688
1,2,4,5-Tetrachlorobenzene	0.241	0.243	3.013	2.802	4.118	8.713
Tetrachloroethylene	5	323	62.500	58.125	85.444	180.769
Toxaphene	0.005	0.014	0.063	0.058	0.085	0.181
2,4,5-TP (Silvex)	47.0	50.3	587.500	546.375	803.171	1699.226
2,4,5-Trichlorophenol	953	1069	11912.500	11078.625	16285.579	34454.524
Trichloroethylene	5	612	62.500	58.125	85.444	180.769
1,1,1-Trichloroethane	200	12586	2500.000	2325.000	3417.750	7230.750
TTHM (Sum of Total Trihalomethanes)	100	N/A	1250.000	1162.500	1708.875	3615.375
Vinyl Chloride	2	415	25.000	23.250	34.178	72.308

CALCULATE 70% AND 85% OF DAILY AVERAGE EFFLUENT LIMITATIONS

Parameter	70%	85%
<u>Aquatic Life</u>		
Aldrin	1.646	1.999
Aluminum	543.861	660.402
Arsenic	397.475	482.649
Cadmium	12.796	15.538
Carbaryl	1.098	1.333
Chlordane	0.018	0.022
Chlorpyrifos	0.046	0.055
Chromium (+3)	7327.105	8897.198
Chromium (+6)	8.781	10.662
Copper	21.458	26.056
Cyanide (free)	25.124	30.508
4,4'-DDT	0.004	0.005
Dementon	0.418	0.508
Dicofol	32.544	39.518
Dieldrin	0.008	0.010
Diuron	115.248	139.944
Endosulfan (alpha)	0.121	0.147
Endosulfan (beta)	0.121	0.147
Endosulfan sulfate	0.121	0.147
Endrin	0.010	0.012
Guthion	0.042	0.051
Heptachlor	0.016	0.019
Hexachlorocyclohexane (Lindane)	0.084	0.102
Lead	36.439	44.247
Malathion	0.042	0.051
Mercury	1.317	1.599
Methoxychlor	0.126	0.152
Mirex	0.004	0.005
Nickel	1630.985	1980.482
Parathion (ethyl)	0.036	0.043
Pentachlorophenol	3.682	4.471
Phenanthrene	16.464	19.992
Polychlorinated Biphenyls (PCBs)	0.059	0.071
Selenium	10.976	13.328
Silver, (free ion)	6.061	7.359
Toxaphene	0.0008	0.0010

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Parameter	70%	85%
Tributyltin (TBT)	0.071	0.087
2,4,5 Trichlorophenol	74.637	90.630
Zinc	272.783	331.236

Human Health

Acrylonitrile	15.312	18.593
Aldrin	0.049	0.059
Arsenic	1203.295	1461.144
Barium	23924.250	29050.875
Benzene	59.811	72.627
Benzidine	0.013	0.015
Benzo(a)anthracene	1.184	1.438
Benzo(a)pyrene	1.184	1.438
Bis(chloromethyl)ether	0.055	0.067
Cadmium	324.726	394.311
Carbon Tetrachloride	44.978	54.616
Chlordane	0.251	0.305
Chlorobenzene	9282.609	11271.740
Chloroform	1196.213	1452.544
Chromium	21003.086	25503.747
Chrysene	4.988	6.057
Cresols	39630.520	48122.774
Cyanide (free)	2392.425	2905.088
4,4'-DDD	0.123	0.150
4,4'-DDE	0.087	0.106
4,4'-DDT	0.087	0.106
4,4'-D	837.349	1016.781
Danitol	8.481	10.299
Dibromochloromethane	110.052	133.634
1,2-Dibromoethane	0.167	0.203
1,3-Dichloropropene (1,3-Dichloropropylene)	272.736	331.180
Dieldrin	0.020	0.025
p-Dichlorobenzene	897.159	1089.408
1,2-Dichloroethane	59.811	72.627
1,1-Dichloroethylene	19.498	23.676
Dicofol	2.572	3.123
Dioxins/Furans (TCDD Equivalents)	1.60e-06	1.95e-06
Endrin	15.192	18.447
Fluoride	47848.500	58101.750
Heptachlor	0.031	0.038
Heptachlor Epoxide	1.902	2.310
Hexachlorobenzene	0.232	0.282
Hexachlorobutadiene	35.767	43.431
Hexachlorocyclohexane (alpha)	1.950	2.368
Hexachlorocyclohexane (beta)	6.818	8.280
Hexachlorocyclohexane (gamma) (Lindane)	2.392	2.905
Hexachloroethane	1007.211	1223.042
Hexachlorophene	0.635	0.771
Lead	507.258	615.956
Mercury	0.146	0.177
Methoxycor	26.436	32.101
Methyl Ethyl Ketone	6.33e+05	7.69e+05

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Parameter	70%	85%
Nitrate-Nitrogen (as Total Nitrogen)	119621.250	145254.375
Nitrobenzene	446.187	541.799
<i>N</i> -Nitrosodiethylamine	0.457	0.555
<i>N</i> -Nitroso-di- <i>n</i> -Butylamine	22.010	26.727
PCB's (Polychlorinated Biphenyls)	1.56e-02	1.89e-02
Pentachlorobenzene	72.969	88.605
Pentachlorophenol	11.962	14.525
Pyridine	1053.863	1279.691
Selenium	598.106	726.272
1,2,4,5-Tetrachlorobenzene	2.883	3.501
Tetrachloroethylene	59.811	72.627
Toxaphene	0.060	0.073
2,4,5-TP (Silvex)	562.220	682.696
2,4,5-Trichlorophenol	11399.905	13842.742
Trichloroethylene	59.811	72.627
1,1,1-Trichloroethane	2392.425	2905.088
TTHM (Sum of Total Trihalomethanes)	1196.213	1452.544
Vinyl Chloride	23.924	29.051

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

**TEXTOX MENU #2 - INTERMITTENT STREAM WITHIN 3 MILES OF A FRESHWATER
PERENNIAL STREAM/RIVER**

The water quality-based effluent limitations demonstrated below are calculated using:

- Table 1, 1997 Texas Surface Water Quality Standards (30 TAC 307) for Aquatic Life
- Table 3, 2000 Texas Surface Water Quality Standards for Human Health
- "Procedures to Implement the Texas Surface Water Quality Standards," Texas Commission on Environmental Quality, January 2003.

PERMITTEE INFORMATION

Permittee Name:	Southwestern Electric Power Company
TPDES Permit No.:	WQ0002496000
Outfall No.:	004
Prepared By:	ONYENOB, John
Date:	November 17, 2006

DISCHARGE INFORMATION

Immediate Receiving Waterbody:	Unnamed Tributary of Hatley Creek
Segment No.:	0505
TSS:	16
pH:	6.7
Hardness:	41
Chloride:	42
Effluent Flow for Aquatic Life (MGD):	2.25
Critical Low Flow [7Q2] (cfs) for immediate:	0.00
Critical Low Flow [7Q2] (cfs) for perennial:	0.36
Chronic Effluent % for Aquatic Life:	90.63
Acute Effluent % for Aquatic Life:	100
Effluent Flow for Human Health (MGD):	1.50
Harmonic Mean Flow (cfs) for perennial:	0.52
Human Health Effluent %:	81.70
Public Water Supply Use?:	Yes

Stream/River Metal	Intercept (b)	Slope (m)	Partitioning Coefficient (K _{po})	Dissolved Fraction (Cd/Ct)		Water Effects Ratio (WER)	
Aluminum	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Arsenic	5.68	-0.73	63240.08	0.50		1.00	Assumed
Cadmium	6.60	-1.13	173517.95	0.26		1.00	Assumed
Chromium (Total)	6.52	-0.93	251286.07	0.20		1.00	Assumed
Chromium (+3)	6.52	-0.93	251286.07	0.20		1.00	Assumed
Chromium (+6)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Copper	6.02	-0.74	134570.92	0.32		1.00	Assumed
Lead	6.45	-0.80	306693.11	0.17		1.00	Assumed
Mercury	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Nickel	5.69	-0.57	100844.36	0.38		1.00	Assumed
Selenium	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Silver	6.38	-1.03	137961.03	0.31		1.00	Assumed
Zinc	6.10	-0.70	180765.69	0.26		1.00	Assumed

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

AQUATIC LIFE**CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS**

Parameter	Acute Standard (ug/L)	Chronic Standard (ug/L)	WLAa	WLAc	LTAa	LTAc	Daily Avg. (ug/L)	Daily Max. (ug/L)
Aldrin	3.0	N/A	3.000	N/A	1.719	N/A	2.527	5.346
Aluminum ^d	991	N/A	991.000	N/A	567.843	N/A	834.729	1765.992
Arsenic ^d	360	190	724.26	421.78	415.00	324.77	477.41	1010.03
Cadmium ^d	12.324	0.563	46.537	2.347	26.666	1.807	2.656	5.620
Carbaryl	2.0	N/A	2.000	N/A	1.146	N/A	1.685	3.564
Chlordane	2.4	0.0043	2.400	0.005	1.375	0.004	0.005	0.011
Chlorpyrifos	0.083	0.041	0.083	0.045	0.048	0.035	0.051	0.108
Chromium (+3) ^d	836.658	99.725	4.20e+03	5.52e+02	2.41e+03	4.25e+02	6.25e+02	1.32e+03
Chromium (+6) ^d	16	11	16.000	12.138	9.168	9.346	13.477	28.512
Copper ^d	8.286	5.973	26.126	20.781	14.970	16.002	22.006	46.557
Cyanide (free)	45.78	10.69	45.780	11.795	26.232	9.083	13.351	28.247
4,4'-DDT	1.1	0.001	1.100	0.001	0.630	0.001	0.001	0.003
Dementon	N/A	0.1	N/A	0.110	N/A	0.085	0.125	0.264
Dicofol	59.3	19.8	59.300	21.848	33.979	16.823	24.729	52.318
Dieldrin	2.5	0.0019	2.500	0.002	1.433	0.002	0.002	0.005
Diuron	210	70	210.000	77.239	120.330	59.474	87.427	184.964
Endosulfan (alpha)	0.22	0.056	0.220	0.062	0.126	0.048	0.070	0.148
Endosulfan (beta)	0.22	0.056	0.220	0.062	0.126	0.048	0.070	0.148
Endosulfan sulfate	0.22	0.056	0.220	0.062	0.126	0.048	0.070	0.148
Endrin	0.18	0.0023	0.180	0.003	0.103	0.002	0.003	0.006
Guthion	N/A	0.01	N/A	0.011	N/A	0.009	0.012	0.026
Hptachlor	0.52	0.0038	0.520	0.004	0.298	0.003	0.005	0.010
Hexachlorocyclohexane (Lindane)	2.0	0.08	2.000	0.088	1.146	0.068	0.100	0.211
Lead ^d	26.242	1.023	155.016	6.665	88.824	5.132	7.545	15.962
Malathion	N/A	0.01	N/A	0.011	N/A	0.009	0.012	0.026
Mercury	2.4	1.3	2.400	1.434	1.375	1.105	1.624	3.435
Methoxychlor	N/A	0.03	N/A	0.033	N/A	0.025	0.037	0.079
Mirex	N/A	0.001	N/A	0.001	N/A	0.001	0.001	0.003
Nickel ^d	667.061	74.157	1743.37	213.85	998.95	164.67	242.06	512.11
Parathion (ethyl)	0.065	0.013	0.065	0.014	0.037	0.011	0.016	0.034
Pentachlorophenol	6.709	4.235494	6.709	4.673	3.844	3.599	5.290	11.192
Phenanthrene	30	30	30.000	33.102	17.190	25.489	25.269	53.461
Polychlorinated Biphenyls (PCBs)	2.0	0.014	2.000	0.015	1.146	0.012	0.017	0.037
Selenium	20	5	20.000	5.517	11.460	4.248	6.245	13.212
Silver (free ion)	0.92	N/A	11.044	N/A	6.328	N/A	9.302	19.680
Toxaphene	0.78	0.0002	0.7800	0.0002	0.4469	0.0002	0.0003	0.0005
Tributyltin (TBT)	0.13	0.024	0.130	0.026	0.074	0.020	0.030	0.063
2,4,5-Trichlorophenol	136	64	136.000	70.618	77.928	54.376	79.933	169.110
Zinc ^d	54.977	49.795	213.98	213.86	122.61	164.67	180.24	381.32

HUMAN HEALTH**CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS**

Parameter	Water and FW Fish (ug/L)	FW Fish Only (ug/L)	WLAh	LTAh	Daily Avg. (ug/L)	Daily Max. (ug/L)
Acrylonitrile	1.28	10.9	1.567	1.457	2.142	4.532
Aldrin	0.00408	0.00426	0.005	0.005	0.007	0.014
Arsenic ^d	50	N/A	123.130	114.511	168.332	356.130
Barium ^d	2000	N/A	2448.115	2276.747	3346.818	7080.684

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Benzene	5	106	6.120	5.692	8.367	17.702
Benzidine	0.00106	0.00347	0.001	0.001	0.002	0.004
Benzo(a)anthracene	0.099	0.810	0.121	0.113	0.166	0.350
Benzo(a)pyrene	0.099	0.810	0.121	0.113	0.166	0.350
Bis(chloromethyl)ether	0.00462	0.0193	0.006	0.005	0.008	0.016
Cadmium ^d	5	N/A	23.112	21.494	31.596	66.847
Carbon Tetrachloride	3.76	8.4	4.602	4.280	6.292	13.312
Chlordane	0.0210	0.0213	0.026	0.024	0.035	0.074
Chlorobenzene	776	1380	949.869	883.378	1298.566	2747.305
Chloroform	100	1292	122.406	113.837	167.341	354.034
Chromium	100	3320	614.548	571.529	840.148	1777.456
Chrysene	0.417	8.1	0.510	0.475	0.698	1.476
Cresols	3313	13116	4055.303	3771.432	5544.005	11729.152
Cyanide (free)	200	N/A	244.812	227.675	334.682	708.068
4,4'-DDD	0.0103	0.010	0.013	0.012	0.017	0.036
4,4'-DDE	0.00730	0.007	0.009	0.008	0.012	0.026
4,4'-DDT	0.00730	0.007	0.009	0.008	0.012	0.026
2,4'-D	70	N/A	85.684	79.686	117.139	247.824
Danitol	0.709	0.721	0.868	0.807	1.186	2.510
Dibromochloromethane	9.20	71.6	11.261	10.473	15.395	32.571
1,2-Dibromoethane	0.014	0.335	0.017	0.016	0.023	0.050
1,3-Dichloropropene (1,3-Dichloropropylene)	22.8	161	27.909	25.955	38.154	80.720
Dieldrin	0.00171	0.002	0.002	0.002	0.003	0.006
p-Dichlorobenzene	75	N/A	91.804	85.378	125.506	265.526
1,2-Dichloroethane	5	73.9	6.120	5.692	8.367	17.702
1,1-Dichloroethylene	1.63	5.84	1.995	1.856	2.728	5.771
Dicofol	0.215	0.217	0.263	0.245	0.360	0.761
Dioxins/Furans (TCDD Equivalents)	1.34e-07	1.40e-07	1.64e-07	1.53e-07	2.24e-07	4.74e-07
Endrin	1.27	1.34	1.555	1.446	2.125	4.496
Fluoride	4000	N/A	4896.230	4553.494	6693.637	14161.367
Heptachlor	0.00260	0.00265	0.003	0.003	0.004	0.009
Heptachlor Epoxide	0.159	1.1	0.195	0.181	0.266	0.563
Hexachlorobenzene	0.0194	0.0198	0.024	0.022	0.032	0.069
Hexachlorobutadiene	2.99	3.6	3.660	3.404	5.003	10.586
Hexachlorocyclohexane (alpha)	0.163	0.413	0.200	0.186	0.273	0.577
Hexachlorocyclohexane (beta)	0.570	1.45	0.698	0.649	0.954	2.018
Hexachlorocyclohexane (gamma) (Lindane)	0.2	2.00	0.245	0.228	0.335	0.708
Hexachloroethane	84.2	278	103.066	95.851	140.901	298.097
Hexachlorophene	0.0531	0.053	0.065	0.060	0.089	0.188
Lead ^d	4.98	25.3	36.008	33.488	49.227	104.147
Mercury	0.0122	0.0122	0.015	0.014	0.020	0.043
Methoxycor	2.21	2.22	2.705	2.516	3.698	7.824
Methyl Ethyl Ketone	5.29e+04	9.94e+06	6.48e+04	6.02e+04	8.86e+04	1.87e+05
Nitrate-Nitrogen (as Total Nitrogen)	10000	N/A	12240.576	11383.736	16734.091	35403.418
Nitrobenzene	37.3	233	45.657	42.461	62.418	132.055
N-Nitrosodiethylamine	0.0382	7.68	0.047	0.043	0.064	0.135
N-Nitroso-di-n-Butylamine	1.84	13.5	2.252	2.095	3.079	6.514
PCB's (Polychlorinated Biphenyls)	0.0013	0.0013	0.002	0.001	0.002	0.005
Pentachlorobenzene	6.10	6.68	7.467	6.944	10.208	21.596
Pentachlorophenol	1.0	135	1.224	1.138	1.673	3.540
Pyridine	88.10	13333	107.839	100.291	147.427	311.904
Selenium	50	N/A	61.203	56.919	83.670	177.017
1,2,4,5-Tetrachlorobenzene	0.241	0.243	0.295	0.274	0.403	0.853
Tetrachloroethylene	5	323	6.120	5.692	8.367	17.702
Toxaphene	0.005	0.014	0.006	0.006	0.008	0.018

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

2,4,5-TP (Silvex)	47.0	50.3	57.531	53.504	78.650	166.396
2,4,5-Trichlorophenol	953	1069	1166.527	1084.870	1594.759	3373.946
Trichloroethylene	5	612	6.120	5.692	8.367	17.702
1,1,1-Trichloroethane	200	12586	244.812	227.675	334.682	708.068
TTHM (Sum of Trihalomethanes)	100	N/A	122.406	113.837	167.341	354.034
Vinyl Chloride	2	415	2.448	2.277	3.347	7.081

CALCULATE 70% AND 85% OF DAILY AVERAGE EFFLUENT LIMITATIONS

Parameter	70%	85%
<u>Aquatic Life</u>		
Aldrin	1.769	2.148
Aluminum ^d	584.310	709.520
Arsenic ^d	334.188	405.800
Cadmium ^d	1.859	2.258
Carbaryl	1.179	1.432
Chlordane	0.004	0.005
Chlorpyrifos	0.036	0.044
Chromium (+3) ^d	4.38e+02	5.32e+02
Chromium (+6) ^d	9.434	11.455
Copper ^d	15.404	18.705
Cyanide (free)	9.346	11.349
4,4'-DDT	0.001	0.001
Dementon	0.087	0.106
Dicofol	17.310	21.020
Dieldrin	0.002	0.002
Diuron	61.199	74.313
Endosulfan (alpha)	0.049	0.059
Endosulfan (beta)	0.049	0.059
Endosulfan sulfate	0.049	0.059
Endrin	0.002	0.002
Guthion	0.009	0.011
Hptachlor	0.003	0.004
Hexachlorocyclohexane (Lindane)	0.070	0.085
Lead ^d	5.281	6.413
Malathion	0.009	0.011
Mercury	1.137	1.380
Methoxychlor	0.026	0.032
Mirex	0.001	0.001
Nickel ^d	169.441	205.750
Parathion (ethyl)	0.011	0.014
Pentachlorophenol	3.703	4.496
Phenanthrene	17.689	21.479
Polychlorinated Biphenyls (PCBs)	0.012	0.015
Selenium	4.371	5.308
Silver (free ion)	6.512	7.907
Toxaphene	0.0002	0.0002
Tributyltin (TBT)	0.021	0.025
2,4,5-Trichlorophenol	55.953	67.943
Zinc ^d	126.168	153.204
<u>Human Health</u>		
Acrylonitrile	1.499	1.821
Aldrin	0.005	0.006

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Arsenic ^d	117.832	143.082
Barium ^d	0.000	0.000
Benzene	5.857	7.112
Benzidine	0.001	0.002
Benzo(a)anthracene	0.116	0.141
Benzo(a)pyrene	0.116	0.141
Bis(chloromethyl)ether	0.005	0.007
Cadmium ^d	22.117	0.000
Carbon Tetrachloride	4.404	5.348
Chlordane	0.025	0.030
Chlorobenzene	908.996	1103.781
Chloroform	117.139	142.240
Chromium	588.104	714.126
Chrysene	0.488	0.593
Cresols	3880.803	4712.404
Cyanide (free)	0.000	0.000
4,4'-DDD	0.012	0.015
4,4'-DDE	0.009	0.010
4,4'-DDT	0.009	0.010
2,4'-D	0.000	0.000
Danitol	0.831	1.008
Dibromochloromethane	10.777	13.086
1,2-Dibromoethane	0.016	0.020
1,3-Dichloropropene (1,3-Dichloropropylene)	26.708	32.431
Dieldrin	0.002	0.002
<i>p</i> -Dichlorobenzene	0.000	0.000
1,2-Dichloroethane	5.857	7.112
1,1-Dichloroethylene	1.909	2.319
Dicofol	0.252	0.306
Dioxins/Furans (TCDD Equivalents)	1.57e-07	1.91e-07
Endrin	1.488	1.806
Fluoride	0.000	0.000
Heptachlor	0.003	0.004
Heptachlor Epoxide	0.186	0.226
Hexachlorobenzene	0.023	0.028
Hexachlorobutadiene	3.502	4.253
Hexachlorocyclohexane (alpha)	0.191	0.232
Hexachlorocyclohexane (beta)	0.668	0.811
Hexachlorocyclohexane (gamma) (Lindane)	0.234	0.284
Hexachloroethane	98.631	119.766
Hexachlorophene	0.062	0.076
Lead ^d	34.459	41.843
Mercury	0.014	0.017
Methoxychlor	2.589	3.144
Methyl Ethyl Ketone	6.20e+04	7.53e+04
Nitrate-Nitrogen (as Total Nitrogen)	0.000	0.000
Nitrobenzene	43.693	53.055
<i>N</i> -Nitrosodiethylamine	0.045	0.054
<i>N</i> -Nitroso-di- <i>n</i> -Butylamine	2.155	2.617
PCB's (Polychlorinated Biphenyls)	0.002	0.002
Pentachlorobenzene	7.145	8.677
Pentachlorophenol	1.171	1.422
Pyridine	103.199	125.313

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Selenium	0.000	0.000
1,2,4,5-Tetrachlorobenzene	0.282	0.343
Tetrachloroethylene	5.857	7.112
Toxaphene	0.006	0.007
2,4,5-TP (Silvex)	55.055	66.853
2,4,5-Trichlorophenol	1116.331	1355.545
Trichloroethylene	5.857	7.112
1,1,1-Trichloroethane	234.277	284.480
TTHM (Sum of Trihalomethanes)	0.000	0.000
Vinyl Chloride	2.343	2.845

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

TEXTOX MENU #2 - INTERMITTENT STREAM WITHIN 3 MILES OF A FRESHWATER PERENNIAL STREAM/RIVER

The water quality-based effluent limitations demonstrated below are calculated using:

- Table 1, 1997 Texas Surface Water Quality Standards (30 TAC 307) for Aquatic Life
- Table 3, 2000 Texas Surface Water Quality Standards for Human Health
- "Procedures to Implement the Texas Surface Water Quality Standards," Texas Commission on Environmental Quality, January 2003.

PERMITTEE INFORMATION

Permittee Name:	Southwestern Electric Power Company
TPDES Permit No.:	WQ0002496000
Outfall No.:	005
Prepared By:	ONYENOBI, John
Date:	November 17, 2006

DISCHARGE INFORMATION

Immediate Receiving Waterbody:	Unnamed Tributaries of Hatley Creek
Segment No.:	0505
TSS:	16
pH:	6.7
Hardness:	41
Chloride:	42
Effluent Flow for Aquatic Life (MGD):	0.48
Critical Low Flow [7Q2] (cfs) for immediate:	0.00
Critical Low Flow [7Q2] (cfs) for perennial:	0.36
Chronic Effluent % for Aquatic Life:	67.35
Acute Effluent % for Aquatic Life:	100
Effluent Flow for Human Health (MGD):	0.30
Harmonic Mean Flow (cfs) for perennial:	0.52
Human Health Effluent %:	47.16
Public Water Supply Use?:	Yes

Stream/River Metal	Intercept (b)	Slope (m)	Partitioning Coefficient (K _{po})	Dissolved Fraction (Cd/Ct)		Water Effects Ratio (WER)	
Aluminum	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Arsenic	5.68	-0.73	63240.08	0.50		1.00	Assumed
Cadmium	6.60	-1.13	173517.95	0.26		1.00	Assumed
Chromium (Total)	6.52	-0.93	251286.07	0.20		1.00	Assumed
Chromium (+3)	6.52	-0.93	251286.07	0.20		1.00	Assumed
Chromium (+6)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Copper	6.02	-0.74	134570.92	0.32		1.00	Assumed
Lead	6.45	-0.80	306693.11	0.17		1.00	Assumed
Mercury	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Nickel	5.69	-0.57	100844.36	0.38		1.00	Assumed
Selenium	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Silver	6.38	-1.03	137961.03	0.31		1.00	Assumed
Zinc	6.10	-0.70	180765.69	0.26		1.00	Assumed

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

AQUATIC LIFE**CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS**

Parameter	Acute Standard (ug/L)	Chronic Standard (ug/L)	WLAa	WLAc	LTAa	LTAc	Daily Avg. (ug/L)	Daily Max. (ug/L)
Aldrin	3.0	N/A	3.000	N/A	1.719	N/A	2.527	5.346
Aluminum ^d	991	N/A	991.000	N/A	567.843	N/A	834.729	1765.992
Arsenic ^d	360	190	724.26	567.54	415.00	437.01	610.05	1290.66
Cadmium ^d	12.324	0.563	46.537	3.158	26.666	2.432	3.574	7.562
Carbaryl	2.0	N/A	2.000	N/A	1.146	N/A	1.685	3.564
Chlordane	2.4	0.0043	2.400	0.006	1.375	0.005	0.007	0.015
Chlorpyrifos	0.083	0.041	0.083	0.061	0.048	0.047	0.069	0.146
Chromium (+3) ^d	836.658	99.725	4.20e+03	7.43e+02	2.41e+03	5.72e+02	8.41e+02	1.78e+03
Chromium (+6) ^d	16	11	16.000	16.332	9.168	12.576	13.477	28.512
Copper ^d	8.286	5.973	26.126	27.963	14.970	21.532	22.006	46.557
Cyanide (free)	45.78	10.69	45.780	15.872	26.232	12.221	17.965	38.008
4,4'-DDT	1.1	0.001	1.100	0.001	0.630	0.001	0.002	0.004
Dementon	N/A	0.1	N/A	0.148	N/A	0.114	0.168	0.356
Dicofol	59.3	19.8	59.300	29.398	33.979	22.636	33.275	70.399
Dieldrin	2.5	0.0019	2.500	0.003	1.433	0.002	0.003	0.007
Diuron	210	70	210.000	103.932	120.330	80.027	117.640	248.885
Endosulfan (alpha)	0.22	0.056	0.220	0.083	0.126	0.064	0.094	0.199
Endosulfan (beta)	0.22	0.056	0.220	0.083	0.126	0.064	0.094	0.199
Endosulfan sulfate	0.22	0.056	0.220	0.083	0.126	0.064	0.094	0.199
Endrin	0.18	0.0023	0.180	0.003	0.103	0.003	0.004	0.008
Guthion	N/A	0.01	N/A	0.015	N/A	0.011	0.017	0.036
Hptachlor	0.52	0.0038	0.520	0.006	0.298	0.004	0.006	0.014
Hexachlorocyclohexane (Lindane)	2.0	0.08	2.000	0.119	1.146	0.091	0.134	0.284
Lead ^d	26.242	1.023	155.016	8.969	88.824	6.906	10.152	21.478
Malathion	N/A	0.01	N/A	0.015	N/A	0.011	0.017	0.036
Mercury	2.4	1.3	2.400	1.930	1.375	1.486	2.022	4.277
Methoxychlor	N/A	0.03	N/A	0.045	N/A	0.034	0.050	0.107
Mirex	N/A	0.001	N/A	0.001	N/A	0.001	0.002	0.004
Nickel ^d	667.061	74.157	1743.37	287.76	998.95	221.57	325.71	689.09
Parathion (ethyl)	0.065	0.013	0.065	0.019	0.037	0.015	0.022	0.046
Pentachlorophenol	6.709	4.235494	6.709	6.289	3.844	4.842	5.651	11.956
Phenanthrene	30	30	30.000	44.542	17.190	34.297	25.269	53.461
Polychlorinated Biphenyls (PCBs)	2.0	0.014	2.000	0.021	1.146	0.016	0.024	0.050
Selenium	20	5	20.000	7.424	11.460	5.716	8.403	17.778
Silver (free ion)	0.92	N/A	11.044	N/A	6.328	N/A	9.302	19.680
Toxaphene	0.78	0.0002	0.7800	0.0003	0.4469	0.0002	0.0003	0.0007
Tributyltin (TBT)	0.13	0.024	0.130	0.036	0.074	0.027	0.040	0.085
2,4,5-Trichlorophenol	136	64	136.000	95.023	77.928	73.168	107.557	227.552
Zinc ^d	54.977	49.795	213.98	287.76	122.61	221.58	180.24	381.32

HUMAN HEALTH**CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS**

Parameter	Water and FW Fish (ug/L)	FW Fish Only (ug/L)	WLAh	LTAh	Daily Avg. (ug/L)	Daily Max. (ug/L)
Acrylonitrile	1.28	10.9	2.714	2.524	3.710	7.850
Aldrin	0.00408	0.00426	0.009	0.008	0.012	0.025
Arsenic ^d	50	N/A	213.284	198.354	291.581	616.882
Barium ^d	2000	N/A	4240.576	3943.736	5797.291	12265.018

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Benzene	5	106	10.601	9.859	14.493	30.663
Benidine	0.00106	0.00347	0.002	0.002	0.003	0.007
Benzo(a)anthracene	0.099	0.810	0.210	0.195	0.287	0.607
Benzo(a)pyrene	0.099	0.810	0.210	0.195	0.287	0.607
Bis(chloromethyl)ether	0.00462	0.0193	0.010	0.009	0.013	0.028
Cadmium ^d	5	N/A	40.034	37.232	54.731	115.791
Carbon Tetrachloride	3.76	8.4	7.972	7.414	10.899	23.058
Chlordane	0.0210	0.0213	0.045	0.041	0.061	0.129
Chlorobenzene	776	1380	1645.343	1530.169	2249.349	4758.827
Chloroform	100	1292	212.029	197.187	289.865	613.251
Chromium	100	3320	1064.507	989.991	1455.287	3078.873
Chrysene	0.417	8.1	0.884	0.822	1.209	2.557
Cresols	3313	13116	7024.514	6532.798	9603.213	20317.002
Cyanide (free)	200	N/A	424.058	394.374	579.729	1226.502
4,4'-DDD	0.0103	0.010	0.022	0.020	0.030	0.063
4,4'-DDE	0.00730	0.007	0.015	0.014	0.021	0.045
4,4'-DDT	0.00730	0.007	0.015	0.014	0.021	0.045
2,4'-D	70	N/A	148.420	138.031	202.905	429.276
Danitol	0.709	0.721	1.503	1.398	2.055	4.348
Dibromochloromethane	9.20	71.6	19.507	18.141	26.668	56.419
1,2-Dibromoethane	0.014	0.335	0.030	0.028	0.041	0.086
1,3-Dichloropropene (1,3-Dichloropropylene)	22.8	161	48.343	44.959	66.089	139.821
Dieldrin	0.00171	0.002	0.004	0.003	0.005	0.010
p-Dichlorobenzene	75	N/A	159.022	147.890	217.398	459.938
1,2-Dichloroethane	5	73.9	10.601	9.859	14.493	30.663
1,1-Dichloroethylene	1.63	5.84	3.456	3.214	4.725	9.996
Dicofol	0.215	0.217	0.456	0.424	0.623	1.318
Dioxins/Furans (TCDD Equivalents)	1.34e-07	1.40e-07	2.84e-07	2.64e-07	3.88e-07	8.22e-07
Endrin	1.27	1.34	2.693	2.504	3.681	7.788
Fluoride	4000	N/A	8481.152	7887.471	11594.583	24530.036
Heptachlor	0.00260	0.00265	0.006	0.005	0.008	0.016
Heptachlor Epoxide	0.159	1.1	0.337	0.314	0.461	0.975
Hexachlorobenzene	0.0194	0.0198	0.041	0.038	0.056	0.119
Hexachlorobutadiene	2.99	3.6	6.340	5.896	8.667	18.336
Hexachlorocyclohexane (alpha)	0.163	0.413	0.346	0.321	0.472	1.000
Hexachlorocyclohexane (beta)	0.570	1.45	1.209	1.124	1.652	3.496
Hexachlorocyclohexane (gamma) (Lindane)	0.2	2.00	0.424	0.394	0.580	1.227
Hexachloroethane	84.2	278	178.528	166.031	244.066	516.357
Hexachlorophene	0.0531	0.053	0.113	0.105	0.154	0.326
Lead ^d	4.98	25.3	62.373	58.007	85.270	180.402
Mercury	0.0122	0.0122	0.026	0.024	0.035	0.075
Methoxychlor	2.21	2.22	4.686	4.358	6.406	13.553
Methyl Ethyl Ketone	5.29e+04	9.94e+06	1.12e+05	1.04e+05	1.53e+05	3.25e+05
Nitrate-Nitrogen (as Total Nitrogen)	10000	N/A	21202.880	19718.678	28986.457	61325.090
Nitrobenzene	37.3	233	79.087	73.551	108.119	228.743
N-Nitrosodiethylamine	0.0382	7.68	0.081	0.075	0.111	0.234
N-Nitroso-di-n-Butylamine	1.84	13.5	3.901	3.628	5.334	11.284
PCB's (Polychlorinated Biphenyls)	0.0013	0.0013	0.003	0.003	0.004	0.008
Pentachlorobenzene	6.10	6.68	12.934	12.028	17.682	37.408
Pentachlorophenol	1.0	135	2.120	1.972	2.899	6.133
Pyridine	88.10	13333	186.797	173.722	255.371	540.274
Selenium	50	N/A	106.014	98.593	144.932	306.625
1,2,4,5-Tetrachlorobenzene	0.241	0.243	0.511	0.475	0.699	1.478
Tetrachloroethylene	5	323	10.601	9.859	14.493	30.663
Toxaphene	0.005	0.014	0.011	0.010	0.014	0.031

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

2,4,5-TP (Silvex)	47.0	50.3	99.654	92.678	136.236	288.228
2,4,5-Trichlorophenol	953	1069	2020.634	1879.190	2762.409	5844.281
Trichloroethylene	5	612	10.601	9.859	14.493	30.663
1,1,1-Trichloroethane	200	12586	424.058	394.374	579.729	1226.502
TTHM (Sum of Trihalomethanes)	100	N/A	212.029	197.187	289.865	613.251
Vinyl Chloride	2	415	4.241	3.944	5.797	12.265

CALCULATE 70% AND 85% OF DAILY AVERAGE EFFLUENT LIMITATIONS

Parameter	70%	85%
<u>Aquatic Life</u>		
Aldrin	1.769	2.148
Aluminum ^d	584.310	709.520
Arsenic ^d	427.038	518.546
Cadmium ^d	2.502	3.038
Carbaryl	1.179	1.432
Chlordane	0.005	0.006
Chlorpyrifos	0.048	0.059
Chromium (+3) ^d	5.89e+02	7.15e+02
Chromium (+6) ^d	9.434	11.455
Copper ^d	15.404	18.705
Cyanide (free)	12.576	15.271
4,4'-DDT	0.001	0.001
Dementon	0.118	0.143
Dicofol	23.293	28.284
Dieldrin	0.002	0.003
Diuron	82.348	99.994
Endosulfan (alpha)	0.066	0.080
Endosulfan (beta)	0.066	0.080
Endosulfan sulfate	0.066	0.080
Endrin	0.003	0.003
Guthion	0.012	0.014
Hptachlor	0.004	0.005
Hexachlorocyclohexane (Lindane)	0.094	0.114
Lead ^d	7.106	8.629
Malathion	0.012	0.014
Mercury	1.415	1.718
Methoxychlor	0.035	0.043
Mirex	0.001	0.001
Nickel ^d	227.998	276.855
Parathion (ethyl)	0.015	0.019
Pentachlorophenol	3.956	4.804
Phenanthrene	17.689	21.479
Polychlorinated Biphenyls (PCBs)	0.016	0.020
Selenium	5.882	7.142
Silver (free ion)	6.512	7.907
Toxaphene	0.0002	0.0003
Tributyltin (TBT)	0.028	0.034
2,4,5-Trichlorophenol	75.290	91.423
Zinc ^d	126.168	153.204
<u>Human Health</u>		
Acrylonitrile	2.597	3.154
Aldrin	0.008	0.010

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Arsenic ^d	204.107	247.844
Barium ^d	0.000	0.000
Benzene	10.145	12.319
Benzidine	0.002	0.003
Benzo(a)anthracene	0.201	0.244
Benzo(a)pyrene	0.201	0.244
Bis(chloromethyl)ether	0.009	0.011
Cadmium ^d	38.311	0.000
Carbon Tetrachloride	7.629	9.264
Chlordane	0.043	0.052
Chlorobenzene	1574.544	1911.947
Chloroform	202.905	246.385
Chromium	1018.701	1236.994
Chrysene	0.846	1.027
Cresols	6722.249	8162.731
Cyanide (free)	0.000	0.000
4,4'-DDD	0.021	0.025
4,4'-DDE	0.015	0.018
4,4'-DDT	0.015	0.018
2,4'-D	0.000	0.000
Danitol	1.439	1.747
Dibromochloromethane	18.667	22.667
1,2-Dibromoethane	0.028	0.034
1,3-Dichloropropene (1,3-Dichloropropylene)	46.262	56.176
Dieldrin	0.003	0.004
<i>p</i> -Dichlorobenzene	0.000	0.000
1,2-Dichloroethane	10.145	12.319
1,1-Dichloroethylene	3.307	4.016
Dicofol	0.436	0.530
Dioxins/Furans (TCDD Equivalents)	2.72e-07	3.30e-07
Endrin	2.577	3.129
Fluoride	0.000	0.000
Heptachlor	0.005	0.006
Heptachlor Epoxide	0.323	0.392
Hexachlorobenzene	0.039	0.048
Hexachlorobutadiene	6.067	7.367
Hexachlorocyclohexane (alpha)	0.331	0.402
Hexachlorocyclohexane (beta)	1.157	1.404
Hexachlorocyclohexane (gamma) (Lindane)	0.406	0.493
Hexachloroethane	170.846	207.456
Hexachlorophene	0.108	0.131
Lead ^d	59.689	72.480
Mercury	0.025	0.030
Methoxychlor	4.484	5.445
Methyl Ethyl Ketone	1.07e+05	1.30e+05
Nitrate-Nitrogen (as Total Nitrogen)	0.000	0.000
Nitrobenzene	75.684	91.902
<i>N</i> -Nitrosodiethylamine	0.078	0.094
<i>N</i> -Nitroso-di- <i>n</i> -Butylamine	3.733	4.533
PCB's (Polychlorinated Biphenyls)	0.003	0.003
Pentachlorobenzene	12.377	15.029
Pentachlorophenol	2.029	2.464
Pyridine	178.759	217.065

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Selenium	0.000	0.000
1,2,4,5-Tetrachlorobenzene	0.489	0.594
Tetrachloroethylene	10.145	12.319
Toxaphene	0.010	0.012
2,4,5-TP (Silvex)	95.365	115.801
2,4,5-Trichlorophenol	1933.687	2348.048
Trichloroethylene	10.145	12.319
1,1,1-Trichloroethane	405.810	492.770
TTHM (Sum of Trihalomethanes)	0.000	0.000
Vinyl Chloride	4.058	4.928

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

**TEXTOX MENU #2 - INTERMITTENT STREAM WITHIN 3 MILES OF A FRESHWATER
PERENNIAL STREAM/RIVER**

The water quality-based effluent limitations demonstrated below are calculated using:

- Table 1, 1997 Texas Surface Water Quality Standards (30 TAC 307) for Aquatic Life
- Table 3, 2000 Texas Surface Water Quality Standards for Human Health
- "Procedures to Implement the Texas Surface Water Quality Standards," Texas Commission on Environmental Quality, January 2003.

PERMITTEE INFORMATION

Permittee Name:	Southwestern Electric Power Company
TPDES Permit No.:	WQ0002496000
Outfall No.:	006
Prepared By:	ONYENOB, John
Date:	November 17, 2006

DISCHARGE INFORMATION

Immediate Receiving Waterbody:	Unnamed Tributaries of Hatley Creek
Segment No.:	0505
TSS:	16
pH:	6.7
Hardness:	41
Chloride:	42
Effluent Flow for Aquatic Life (MGD):	3.93
Critical Low Flow [7Q2] (cfs) for immediate:	0.00
Critical Low Flow [7Q2] (cfs) for perennial:	0.36
Chronic Effluent % for Aquatic Life:	94.41
Acute Effluent % for Aquatic Life:	100
Effluent Flow for Human Health (MGD):	1.51
Harmonic Mean Flow (cfs) for perennial:	0.52
Human Health Effluent %:	81.79
Public Water Supply Use?:	Yes

Stream/River Metal	Intercept (b)	Slope (m)	Partitioning Coefficient (K _{po})	Dissolved Fraction (Cd/Ct)		Water Effects Ratio (WER)	
Aluminum	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Arsenic	5.68	-0.73	63240.08	0.50		1.00	Assumed
Cadmium	6.60	-1.13	173517.95	0.26		1.00	Assumed
Chromium (Total)	6.52	-0.93	251286.07	0.20		1.00	Assumed
Chromium (+3)	6.52	-0.93	251286.07	0.20		1.00	Assumed
Chromium (+6)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Copper	6.02	-0.74	134570.92	0.32		1.00	Assumed
Lead	6.45	-0.80	306693.11	0.17		1.00	Assumed
Mercury	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Nickel	5.69	-0.57	100844.36	0.38		1.00	Assumed
Selenium	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Silver	6.38	-1.03	137961.03	0.31		1.00	Assumed
Zinc	6.10	-0.70	180765.69	0.26		1.00	Assumed

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

AQUATIC LIFE**CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS**

Parameter	Acute Standard (ug/L)	Chronic Standard (ug/L)	WLAa	WLAc	LTAa	LTAc	Daily Avg. (ug/L)	Daily Max. (ug/L)
Aldrin	3.0	N/A	3.000	N/A	1.719	N/A	2.527	5.346
Aluminum ^d	991	N/A	991.000	N/A	567.843	N/A	834.729	1765.992
Arsenic ^d	360	190	724.26	404.88	415.00	311.76	458.28	969.57
Cadmium ^d	12.324	0.563	46.537	2.253	26.666	1.735	2.550	5.395
Carbaryl	2.0	N/A	2.000	N/A	1.146	N/A	1.685	3.564
Chlordane	2.4	0.0043	2.400	0.005	1.375	0.004	0.005	0.011
Chlorpyrifos	0.083	0.041	0.083	0.043	0.048	0.033	0.049	0.104
Chromium (+3) ^d	836.658	99.725	4.20e+03	5.30e+02	2.41e+03	4.08e+02	6.00e+02	1.27e+03
Chromium (+6) ^d	16	11	16.000	11.651	9.168	8.971	13.188	27.901
Copper ^d	8.286	5.973	26.126	19.949	14.970	15.360	22.006	46.557
Cyanide (free)	45.78	10.69	45.780	11.323	26.232	8.719	12.816	27.115
4,4'-DDT	1.1	0.001	1.100	0.001	0.630	0.001	0.001	0.003
Dementon	N/A	0.1	N/A	0.106	N/A	0.082	0.120	0.254
Dicofol	59.3	19.8	59.300	20.972	33.979	16.149	23.739	50.222
Dieldrin	2.5	0.0019	2.500	0.002	1.433	0.002	0.002	0.005
Diuron	210	70	210.000	74.144	120.330	57.091	83.924	177.553
Endosulfan (alpha)	0.22	0.056	0.220	0.059	0.126	0.046	0.067	0.142
Endosulfan (beta)	0.22	0.056	0.220	0.059	0.126	0.046	0.067	0.142
Endosulfan sulfate	0.22	0.056	0.220	0.059	0.126	0.046	0.067	0.142
Endrin	0.18	0.0023	0.180	0.002	0.103	0.002	0.003	0.006
Guthion	N/A	0.01	N/A	0.011	N/A	0.008	0.012	0.025
Hptachlor	0.52	0.0038	0.520	0.004	0.298	0.003	0.005	0.010
Hexachlorocyclohexane (Lindane)	2.0	0.08	2.000	0.085	1.146	0.065	0.096	0.203
Lead ^d	26.242	1.023	155.016	6.398	88.824	4.927	7.242	15.322
Malathion	N/A	0.01	N/A	0.011	N/A	0.008	0.012	0.025
Mercury	2.4	1.3	2.400	1.377	1.375	1.060	1.559	3.297
Methoxychlor	N/A	0.03	N/A	0.032	N/A	0.024	0.036	0.076
Mirex	N/A	0.001	N/A	0.001	N/A	0.001	0.001	0.003
Nickel ^d	667.061	74.157	1743.37	205.28	998.95	158.07	232.36	491.59
Parathion (ethyl)	0.065	0.013	0.065	0.014	0.037	0.011	0.016	0.033
Pentachlorophenol	6.709	4.235494	6.709	4.486	3.844	3.454	5.078	10.743
Phenanthrene	30	30	30.000	31.776	17.190	24.468	25.269	53.461
Polychlorinated Biphenyls (PCBs)	2.0	0.014	2.000	0.015	1.146	0.011	0.017	0.036
Selenium	20	5	20.000	5.296	11.460	4.078	5.995	12.682
Silver (free ion)	0.92	N/A	11.044	N/A	6.328	N/A	9.302	19.680
Toxaphene	0.78	0.0002	0.7800	0.0002	0.4469	0.0002	0.0002	0.0005
Tributyltin (TBT)	0.13	0.024	0.130	0.025	0.074	0.020	0.029	0.061
2,4,5-Trichlorophenol	136	64	136.000	67.789	77.928	52.198	76.731	162.335
Zinc ^d	54.977	49.795	213.98	205.29	122.61	158.07	180.24	381.32

HUMAN HEALTH**CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS**

Parameter	Water and FW Fish (ug/L)	FW Fish Only (ug/L)	WLAh	LTAh	Daily Avg. (ug/L)	Daily Max. (ug/L)
Acrylonitrile	1.28	10.9	1.565	1.455	2.139	4.526
Aldrin	0.00408	0.00426	0.005	0.005	0.007	0.014
Arsenic ^d	50	N/A	122.981	114.373	168.128	355.699
Barium ^d	2000	N/A	2445.148	2273.987	3342.761	7072.100

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Benzene	5	106	6.113	5.685	8.357	17.680
Benzidine	0.00106	0.00347	0.001	0.001	0.002	0.004
Benzo(a)anthracene	0.099	0.810	0.121	0.113	0.165	0.350
Benzo(a)pyrene	0.099	0.810	0.121	0.113	0.165	0.350
Bis(chloromethyl)ether	0.00462	0.0193	0.006	0.005	0.008	0.016
Cadmium ^d	5	N/A	23.084	21.468	31.558	66.766
Carbon Tetrachloride	3.76	8.4	4.597	4.275	6.284	13.296
Chlordane	0.0210	0.0213	0.026	0.024	0.035	0.074
Chlorobenzene	776	1380	948.717	882.307	1296.991	2743.975
Chloroform	100	1292	122.257	113.699	167.138	353.605
Chromium	100	3320	613.803	570.836	839.130	1775.301
Chrysene	0.417	8.1	0.510	0.474	0.697	1.475
Cresols	3313	13116	4050.387	3766.860	5537.284	11714.934
Cyanide (free)	200	N/A	244.515	227.399	334.276	707.210
4,4'-DDD	0.0103	0.010	0.013	0.012	0.017	0.036
4,4'-DDE	0.00730	0.007	0.009	0.008	0.012	0.026
4,4'-DDT	0.00730	0.007	0.009	0.008	0.012	0.026
2,4'-D	70	N/A	85.580	79.590	116.997	247.524
Danitol	0.709	0.721	0.867	0.806	1.185	2.507
Dibromochloromethane	9.20	71.6	11.248	10.460	15.377	32.532
1,2-Dibromoethane	0.014	0.335	0.017	0.016	0.023	0.050
1,3-Dichloropropene (1,3-Dichloropropylene)	22.8	161	27.875	25.923	38.107	80.622
Dieldrin	0.00171	0.002	0.002	0.002	0.003	0.006
p-Dichlorobenzene	75	N/A	91.693	85.275	125.354	265.204
1,2-Dichloroethane	5	73.9	6.113	5.685	8.357	17.680
1,1-Dichloroethylene	1.63	5.84	1.993	1.853	2.724	5.764
Dicofol	0.215	0.217	0.263	0.244	0.359	0.760
Dioxins/Furans (TCDD Equivalents)	1.34e-07	1.40e-07	1.64e-07	1.52e-07	2.24e-07	4.74e-07
Endrin	1.27	1.34	1.553	1.444	2.123	4.491
Fluoride	4000	N/A	4890.295	4547.974	6685.522	14144.201
Heptachlor	0.00260	0.00265	0.003	0.003	0.004	0.009
Heptachlor Epoxide	0.159	1.1	0.194	0.181	0.266	0.562
Hexachlorobenzene	0.0194	0.0198	0.024	0.022	0.032	0.069
Hexachlorobutadiene	2.99	3.6	3.656	3.400	4.997	10.573
Hexachlorocyclohexane (alpha)	0.163	0.413	0.199	0.185	0.272	0.576
Hexachlorocyclohexane (beta)	0.570	1.45	0.697	0.648	0.953	2.016
Hexachlorocyclohexane (gamma) (Lindane)	0.2	2.00	0.245	0.227	0.334	0.707
Hexachloroethane	84.2	278	102.941	95.735	140.730	297.735
Hexachlorophene	0.0531	0.053	0.065	0.060	0.089	0.188
Lead ^d	4.98	25.3	35.965	33.447	49.168	104.021
Mercury	0.0122	0.0122	0.015	0.014	0.020	0.043
Methoxyclor	2.21	2.22	2.702	2.513	3.694	7.815
Methyl Ethyl Ketone	5.29e+04	9.94e+06	6.47e+04	6.02e+04	8.84e+04	1.87e+05
Nitrate-Nitrogen (as Total Nitrogen)	10000	N/A	12225.738	11369.936	16713.806	35360.501
Nitrobenzene	37.3	233	45.602	42.410	62.343	131.895
N-Nitrosodiethylamine	0.0382	7.68	0.047	0.043	0.064	0.135
N-Nitroso-di-n-Butylamine	1.84	13.5	2.250	2.092	3.075	6.506
PCB's (Polychlorinated Biphenyls)	0.0013	0.0013	0.002	0.001	0.002	0.005
Pentachlorobenzene	6.10	6.68	7.458	6.936	10.195	21.570
Pentachlorophenol	1.0	135	1.223	1.137	1.671	3.536
Pyridine	88.10	13333	107.709	100.169	147.249	311.526
Selenium	50	N/A	61.129	56.850	83.569	176.803
1,2,4,5-Tetrachlorobenzene	0.241	0.243	0.295	0.274	0.403	0.852
Tetrachloroethylene	5	323	6.113	5.685	8.357	17.680
Toxaphene	0.005	0.014	0.006	0.006	0.008	0.018

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

2,4,5-TP (Silvex)	47.0	50.3	57.461	53.439	78.555	166.194
2,4,5-Trichlorophenol	953	1069	1165.113	1083.555	1592.826	3369.856
Trichloroethylene	5	612	6.113	5.685	8.357	17.680
1,1,1-Trichloroethane	200	12586	244.515	227.399	334.276	707.210
TTHM (Sum of Trihalomethanes)	100	N/A	122.257	113.699	167.138	353.605
Vinyl Chloride	2	415	2.445	2.274	3.343	7.072

CALCULATE 70% AND 85% OF DAILY AVERAGE EFFLUENT LIMITATIONS

Parameter	70%	85%
<i><u>Aquatic Life</u></i>		
Aldrin	1.769	2.148
Aluminum ^d	584.310	709.520
Arsenic ^d	320.799	389.542
Cadmium ^d	1.785	2.167
Carbaryl	1.179	1.432
Chlordane	0.004	0.004
Chloropyrifos	0.034	0.042
Chromium (+3) ^d	4.20e+02	5.10e+02
Chromium (+6) ^d	9.232	11.210
Copper ^d	15.404	18.705
Cyanide (free)	8.971	10.894
4,4'-DDT	0.001	0.001
Dementon	0.084	0.102
Dicofol	16.617	20.178
Dieldrin	0.002	0.002
Diuron	58.747	71.335
Endosulfan (alpha)	0.047	0.057
Endosulfan (beta)	0.047	0.057
Endosulfan sulfate	0.047	0.057
Endrin	0.002	0.002
Guthion	0.008	0.010
Hptachlor	0.003	0.004
Hexachlorocyclohexane (Lindane)	0.067	0.082
Lead ^d	5.070	6.156
Malathion	0.008	0.010
Mercury	1.091	1.325
Methoxychlor	0.025	0.031
Mirex	0.001	0.001
Nickel ^d	162.653	197.507
Parathion (ethyl)	0.011	0.013
Pentachlorophenol	3.555	4.316
Phenanthrene	17.689	21.479
Polychlorinated Biphenyls (PCBs)	0.012	0.014
Selenium	4.196	5.095
Silver (free ion)	6.512	7.907
Toxaphene	0.0002	0.0002
Tributyltin (TBT)	0.020	0.024
2,4,5-Trichlorophenol	53.711	65.221
Zinc ^d	126.168	153.204
<i><u>Human Health</u></i>		
Acrylonitrile	1.498	1.818
Aldrin	0.005	0.006

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Arsenic ^d	117.689	142.908
Barium ^d	0.000	0.000
Benzene	5.850	7.103
Benzidine	0.001	0.002
Benzo(a)anthracene	0.116	0.141
Benzo(a)pyrene	0.116	0.141
Bis(chloromethyl)ether	0.005	0.007
Cadmium ^d	22.091	0.000
Carbon Tetrachloride	4.399	5.342
Chlordane	0.025	0.030
Chlorobenzene	907.894	1102.443
Chloroform	116.997	142.067
Chromium	587.391	713.260
Chrysene	0.488	0.592
Cresols	3876.099	4706.691
Cyanide (free)	0.000	0.000
4,4'-DDD	0.012	0.015
4,4'-DDE	0.009	0.010
4,4'-DDT	0.009	0.010
2,4'-D	0.000	0.000
Danitol	0.830	1.007
Dibromochloromethane	10.764	13.070
1,2-Dibromoethane	0.016	0.020
1,3-Dichloropropene (1,3-Dichloropropylene)	26.675	32.391
Dieldrin	0.002	0.002
<i>p</i> -Dichlorobenzene	0.000	0.000
1,2-Dichloroethane	5.850	7.103
1,1-Dichloroethylene	1.907	2.316
Dicofol	0.252	0.305
Dioxins/Furans (TCDD Equivalents)	1.57e-07	1.90e-07
Endrin	1.486	1.804
Fluoride	0.000	0.000
Heptachlor	0.003	0.004
Heptachlor Epoxide	0.186	0.226
Hexachlorobenzene	0.023	0.028
Hexachlorobutadiene	3.498	4.248
Hexachlorocyclohexane (alpha)	0.191	0.232
Hexachlorocyclohexane (beta)	0.667	0.810
Hexachlorocyclohexane (gamma) (Lindane)	0.234	0.284
Hexachloroethane	98.511	119.621
Hexachlorophene	0.062	0.075
Lead ^d	34.417	41.792
Mercury	0.014	0.017
Methoxychlor	2.586	3.140
Methyl Ethyl Ketone	6.19e+04	7.52e+04
Nitrate-Nitrogen (as Total Nitrogen)	0.000	0.000
Nitrobenzene	43.640	52.991
<i>N</i> -Nitrosodiethylamine	0.045	0.054
<i>N</i> -Nitroso-di- <i>n</i> -Butylamine	2.153	2.614
PCB's (Polychlorinated Biphenyls)	0.002	0.002
Pentachlorobenzene	7.137	8.666
Pentachlorophenol	1.170	1.421
Pyridine	103.074	125.161

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Selenium	0.000	0.000
1,2,4,5-Tetrachlorobenzene	0.282	0.342
Tetrachloroethylene	5.850	7.103
Toxaphene	0.006	0.007
2,4,5-TP (Silvex)	54.988	66.772
2,4,5-Trichlorophenol	1114.978	1353.902
Trichloroethylene	5.850	7.103
1,1,1-Trichloroethane	233.993	284.135
TTHM (Sum of Trihalomethanes)	0.000	0.000
Vinyl Chloride	2.340	2.841

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

APPENDIX C

COMPARISON OF EFFLUENT LIMITATIONS DERIVATION

Pollutant	Existing TPDES Permit Limits		Water Quality-Based Effluent Limits		Technology-Based Effluent Limits		Proposed TPDES Permit Limits, mg/l		Basis of Limit
	Daily Avg.	Daily Max.	Daily Avg.	Daily Max.	Daily Avg.	Daily Max.	Daily Avg.	Daily Max.	
<u>Outfall 002</u>									
Temperature (°F)	(Report)	(122)	N/A	N/A	N/A	N/A	(Report)	(122)	WQ
TRC ²	N/A	75.6 lb/day 0.2 mg/l	N/A	N/A	N/A	88.0 lb/d 0.2 mg/l	N/A	75.6 lb/d 0.2 mg/l	TBL
<u>Outfall 102</u>									
TSS	30 mg/l	100 mg/l	N/A	N/A	30 mg/l	100 mg/l	30 mg/l	100 mg/l	TBL
Oil and Grease	15 mg/l	20 mg/l	N/A	N/A	15 mg/l	20 mg/l	15 mg/l	20 mg/l	TBL
Selenium, Total	0.012 mg/l	0.025 mg/l	0.012 mg/l	0.025 mg/l	N/A	N/A	0.012 mg/l	0.025 mg/l	WQL
pH, s.u.	6.0 s.u.	9.0 s.u.	N/A	N/A	6.0 s.u.	9.0 s.u.	6.0 s.u.	9.0 s.u.	TBL
<u>Outfall 202</u>									
TSS	30 mg/l	100 mg/l	N/A	N/A	30 mg/l	100 mg/l	30 mg/l	100 mg/l	TBL
Oil and Grease	15 mg/l	20 mg/l	N/A	N/A	15 mg/l	20 mg/l	15 mg/l	20 mg/l	TBL
Selenium, Total	0.016 mg/l	0.033 mg/l	0.016 mg/l	0.033 mg/l	N/A	N/A	0.016 mg/l	0.033 mg/l	WQL
Iron, Total	1.0 mg/l	1.0 mg/l	N/A	N/A	1.0 mg/l	1.0 mg/l	1.0 mg/l	1.0 mg/l	TBL
Copper, Total	0.5 mg/l	1.0 mg/l	0.5 mg/l	1.0 mg/l	1.0 mg/l	1.0 mg/l	0.5 mg/l	1.0 mg/l	WQL
pH, s.u.	6.0 s.u.	9.0 s.u.	N/A	N/A	6.0 s.u.	9.0 s.u.	6.0 s.u.	9.0 s.u.	TBL
<u>Outfall 302</u>									
BOD ₅	2.5 lb/d 20 mg/l	65 mg/l	N/A	N/A	N/A	N/A	2.5 lb/d 20 mg/l	65 mg/l	BPJ
TSS	2.5 lb/d 20 mg/l	65 mg/l	N/A	N/A	N/A	N/A	2.5 lb/d 20 mg/l	65 mg/l	BPJ
TRC	1.0 mg/l (min)	Report (max)	N/A	N/A	N/A	N/A	1.0 mg/l (min)	Report (max)	BPJ
pH, s.u.	6.0 s.u.	9.0 s.u.	N/A	N/A	6.0 s.u.	9.0 s.u.	6.0 s.u.	9.0 s.u.	TBL
<u>Outfall 003</u>									
TSS	N/A	50 mg/l	N/A	N/A	N/A	50 mg/l	N/A	50 mg/l	TBL
Oil and Grease	N/A	20 mg/l	N/A	N/A	N/A	20 mg/l	N/A	20 mg/l	TBL
Selenium, Total	N/A	0.033 mg/l	N/A	0.033 mg/l	N/A	N/A	N/A	0.033 mg/l	WQL
pH, s.u.	6.0 s.u.	9.0 s.u.	N/A	N/A	6.0 s.u.	9.0 s.u.	6.0 s.u.	9.0 s.u.	TBL

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Pollutant	Existing TPDES Permit Limits		Water Quality-Based Effluent Limits		Technology-Based Effluent Limits		Proposed TPDES Permit Limits, mg/l		Basis of Limit
	Daily Avg.	Daily Max.	Daily Avg.	Daily Max.	Daily Avg.	Daily Max.	Daily Avg.	Daily Max.	
<u>Outfall 004</u>									
TSS	N/A	100 mg/l	N/A	N/A	N/A	100 mg/l	N/A	100 mg/l	TBL
Oil and Grease	N/A	20 mg/l	N/A	N/A	N/A	20 mg/l	N/A	20 mg/l	TBL
Selenium, Total	N/A	0.033 mg/l	N/A	0.033 mg/l	N/A	N/A	N/A	0.033 mg/l	WQL
pH, s.u.	6.0 s.u.	9.0 s.u.	N/A	N/A	6.0 s.u.	9.0 s.u.	6.0 s.u.	9.0 s.u.	TBL
<u>Outfall 005</u>									
TSS	N/A	50 mg/l	N/A	N/A	N/A	50 mg/l	N/A	50 mg/l	TBL
Oil and Grease	N/A	20 mg/l	N/A	N/A	N/A	20 mg/l	N/A	20 mg/l	TBL
pH, s.u.	6.0 s.u.	9.0 s.u.	N/A	N/A	6.0 s.u.	9.0 s.u.	6.0 s.u.	9.0 s.u.	TBL
<u>Outfall 006</u>									
TSS	30 mg/l	100 mg/l	N/A	N/A	30 mg/l	100 mg/l	30 mg/l	100 mg/l	TBL
Oil and Grease	15 mg/l	20 mg/l	N/A	N/A	15 mg/l	20 mg/l	15 mg/l	20 mg/l	TBL
Selenium, Total	0.006 mg/l	0.013 mg/l	0.006 mg/l	0.013 mg/l	N/A	N/A	0.006 mg/l	0.013 mg/l	WQL
pH, s.u.	6.0 s.u.	9.0 s.u.	N/A	N/A	6.0 s.u.	9.0 s.u.	6.0 s.u.	9.0 s.u.	TBL

TSS = Total Suspended Solids

TRC = Total Residual Chlorine



TPDES PERMIT NO. WQ0002496000

[For TCEQ office use only -

EPA I.D. No. TX0087726]

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

P. O. Box 13087

Austin, Texas 78711-3087

This amendment supercedes and replaces TPDES Permit No. WQ0002496000, issued on August 22, 2003.

PERMIT TO DISCHARGE WASTES

under provisions of
Section 402 of the Clean Water Act
and Chapter 26 of the Texas Water Code

Southwestern Electric Power Company

whose mailing address is

2400 Farm-to-Market Road 3251
Hallsville, Texas 76560

is authorized to treat and discharge wastes from the Henry W. Pirkey Power Plant (SIC 4911)

located adjacent to Red Oak Road at a point approximately six miles southeast of the City of Hallsville, Harrison County, Texas

via Outfalls 002 and 003 to Brandy Branch Reservoir; thence to Brandy Branch Creek; thence to the Sabine River Above Toledo Bend Reservoir in Segment 0505 of the Sabine River Basin; and via Outfalls 004, 005 and 006 to unnamed tributaries of Hatley Creek; thence to Hatley Creek; thence to Sabine River Above Toledo Bend Reservoir in Segment No. 0505 of the Sabine River Basin

only according to effluent limitations, monitoring requirements and other conditions set forth in this permit, as well as the rules of the Texas Commission on Environmental Quality (TCEQ), the laws of the State of Texas, and other orders of the TCEQ. The issuance of this permit does not grant to the permittee the right to use private or public property for conveyance of wastewater along the discharge route described in this permit. This includes, but is not limited to, property belonging to any individual, partnership, corporation or other entity. Neither does this permit authorize any invasion of personal rights nor any violation of federal, state, or local laws or regulations. It is the responsibility of the permittee to acquire property rights as may be necessary to use the discharge route.

This permit shall expire at midnight on April 1, 2011.

ISSUED DATE:

For the Commission

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTSOutfall Number 002

1. During the period beginning upon date of issuance and lasting through date of expiration, the permittee is authorized to discharge once through cooling water (*1) and previously monitored effluents subject to the following effluent limitations:

The daily average flow of effluent shall not exceed 600 million gallons per day (MGD). The daily maximum flow shall not exceed 600 MGD.

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>			<u>Minimum Self-Monitoring Requirements</u>	
	Daily Average lbs/day	Daily Maximum lbs/day	mg/l	Single Grab mg/l	Report Daily Average and Daily Maximum Measurement Frequency Sample Type
Flow (MGD)	(Report)	(Report)		N/A	1/day Estimate
Temperature (°F) (*1)	(Report)	(122)		N/A	1/day In-situ
Total Residual Chlorine (*1)	N/A	75.6	0.2	N/A	1/week (*2) Grab

(*1) See Other Requirements No. 3.

(*2) Samples shall be representative of periods of chlorination. Sampling is only required when there is chlorination during a calendar week.

2. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
3. Effluent monitoring samples shall be taken at the following location: At Outfall 002, where condenser cooling water and previously monitored effluents are discharged from the discharge canal to Brandy Branch Reservoir.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTSOutfall Number 102

1. During the period beginning upon date of issuance and lasting through date of expiration, the permittee is authorized to discharge low volume wastewater (*1), subject to the following effluent limitations:

Volume: Intermittent and flow variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average mg/l	Daily Maximum mg/l	Single Grab mg/l	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow (MGD)	(Report)	(Report)	N/A	1/day (*2)	Estimate
Total Suspended Solids	30	100	100	1/quarter (*2)	Grab (*3)
Oil and Grease	15	20	20	1/quarter (*2)	Grab (*3)
Selenium, Total	0.012	0.025	0.025	1/quarter (*2)	Grab (*3)

(*1) See Other Requirements No. 3.

(*2) When discharge occurs.

(*3) For total suspended solids, oil and grease, and total selenium: since more than one source is associated with this particular waste category, grab samples from each source shall be either physically or arithmetically composited into a single flow weighted sample for analysis and/or reporting. For pH, samples from each source shall be analyzed separately and the highest and lowest results reported.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*2), by grab sample.
3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
4. Effluent monitoring samples shall be taken at the following location: At Outfall 102, where low volume wastewaters are discharged from the collector pit and/or the low pressure service water system prior to mixing with other waters.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTSOutfall Number 202

1. During the period beginning upon date of issuance and lasting through date of expiration, the permittee is authorized to discharge Plant "X" treated effluent (*1), subject to the following effluent limitations:

The daily average flow of effluent shall not exceed 0.8 million gallons per day (MGD). The daily maximum flow shall not exceed 0.8 MGD.

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>			<u>Minimum Self-Monitoring Requirements</u>	
	Daily Average mg/l	Daily Maximum mg/l	Single Grab mg/l	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow (MGD)	(Report)	(Report)	N/A	1/day (*2)	Estimate
Total Suspended Solids	30	100	100	1/week (*2)	Grab
Oil and Grease	15	20	20	1/week (*2)	Grab
Selenium, Total	0.016	0.033	0.033	1/week (*2)	Grab
Iron, Total (*3)	1.0	1.0	1.0	1/week (*2)	Grab
Copper, Total (*3)	0.5	1.0	1.0	1/week (*2)	Grab

(*1) See Other Requirements No. 6.

(*2) When discharge occurs.

(*3) Effluent limits apply to the discharge of metal cleaning waste only, and shall be monitored only discharging metal cleaning waste or chemical metal cleaning waste.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*2), by grab sample.
3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
4. Effluent monitoring samples shall be taken at the following location: At Outfall 202, after the final Plant "X" treatment prior to mixing with other waters.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTSOutfall Number 302

1. During the period beginning upon date of issuance and lasting through date of expiration, the permittee is authorized to discharge domestic wastewater effluent subject to the following effluent limitations:

The daily average flow of effluent shall not exceed 0.015 million gallons per day (MGD). The daily maximum flow shall not exceed 0.030 MGD.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average lbs/day	mg/l	Daily Maximum mg/l	Single Grab mg/l	Report Daily Average and Daily Maximum Measurement Frequency Sample Type
Flow (MGD)	(Report)		(Report)	N/A	1/day Estimate
Biochemical Oxygen Demand (5-day)	2.5	20	65	65	1 / 2 months Grab (*1)
Total Suspended Solids	2.5	20	65	65	1 / quarter Grab (*1)
Total Chlorine Residual	N/A	1.0 (min)	Report (max)	N/A	1/week Grab (*1)

(*1) For biochemical oxygen demand (5-day) and total suspended solids: since more than one source is associated with this particular waste category, grab samples from each source shall be either physically or arithmetically composited into a single flow weighted sample for analysis and/or reporting. For total residual chlorine and pH: samples from each source shall be analyzed separately and the highest and lowest results reported.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week, by grab sample (*1).
3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
4. Effluent monitoring samples shall be taken at the following location: At Outfall 302, after the final treatment unit prior to mixing with other waters.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTSOutfall Number 003

1. During the period beginning upon date of issuance and lasting through date of expiration, the permittee is authorized to discharge storm water from the Lignite Runoff Pond (*1) (*2), subject to the following effluent limitations:

Volume: Intermittent and flow variable.

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>			<u>Minimum Self-Monitoring Requirements</u>	
	Daily Average mg/l	Daily Maximum mg/l	Single Grab mg/l	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow (MGD)	(Report)	(Report)	N/A	1/week (*3)	Estimate
Total Suspended Solids	N/A	50	50	1/month (*3)	Grab
Oil and Grease	N/A	20	20	1/year (*3)	Grab
Selenium, Total	N/A	0.033	0.033	1/week (*3)	Grab

(*1) See Other Requirements No. 5.

(*2) These wastes may be routed to the Plant "X" treatment plant and discharged via Outfall 202.

(*3) When discharge occurs.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*3), by grab sample.
3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
4. Effluent monitoring samples shall be taken at the following location: At Outfall 003, where wastewater discharges from the Lignite Runoff Pond to Brandy Branch Reservoir.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTSOutfall Number 004

1. During the period beginning upon date of issuance and lasting through date of expiration, the permittee is authorized to discharge storm water from the Flue Gas Desuphurization/Fly Ash Landfill Retention Pond (*1) (*2), subject to the following effluent limitations:

Volume: Intermittent and flow variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average mg/l	Daily Maximum mg/l	Single Grab mg/l	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow (MGD)	(Report)	(Report)	N/A	1/week (*3)	Estimate
Total Suspended Solids	N/A	100	100	1/month (*3)	Grab
Oil and Grease	N/A	20	20	1/year (*3)	Grab
Selenium, Total	N/A	0.036	0.036	1/week (*3)	Grab

(*1) See Other Requirements No. 5.

(*2) These wastes may be routed to the Plant "X" treatment plant and discharged via Outfall 202.

(*3) When discharge occurs.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*3), by grab sample.
3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
4. Effluent monitoring samples shall be taken at the following location: At Outfall 004, where wastewater discharges from the Flue Gas Desuphurization/Fly Ash Landfill Retention Pond to an unnamed tributary of Hatley Creek.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTSOutfall Number 005

1. During the period beginning upon date of issuance and lasting through date of expiration, the permittee is authorized to discharge storm water from the Limestone Runoff Pond (*1), subject to the following effluent limitations:

Volume: Intermittent and flow variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average mg/l	Daily Maximum mg/l	Single Grab mg/l	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow (MGD)	(Report)	(Report)	N/A	1/week (*2)	Estimate
Total Suspended Solids	N/A	50	50	1/month (*2)	Grab
Oil and Grease	N/A	20	20	1/year (*2)	Grab

(*1) See Other Requirements No. 5.

(*2) When discharge occurs.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*2), by grab sample.
3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
4. Effluent monitoring samples shall be taken at the following location: At Outfall 005, where wastewater discharges from the Limestone Runoff Pond to an unnamed tributary of Hatley Creek.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTSOutfall Number 006

1. During the period beginning upon date of issuance and lasting through date of expiration, the permittee is authorized to discharge wastewater from the Ash Pond (*1) (*2), subject to the following effluent limitations:

Volume: Intermittent and flow variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average mg/l	Daily Maximum mg/l	Single Grab mg/l	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow (MGD)	(Report)	(Report)	N/A	1/day (*3)	Estimate
Total Suspended Solids	30	100	100	1/month (*3)	Grab
Oil and Grease	15	20	20	1/month (*3)	Grab
Selenium, Total	0.006	0.013	0.013	1/week (*3)	Grab

(*1) See Other Requirements No. 5.

(*2) These wastewater may be routed to Plant "X" treatment plant and discharge via Outfall 202.

(*3) When discharge occurs.

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week (*3), by grab sample.
3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
4. Effluent monitoring samples shall be taken at the following location: At Outfall 006, where commingled wastewater are discharged from the Ash Pond to an unnamed tributary of Hatley Creek.

DEFINITIONS AND STANDARD PERMIT CONDITIONS

As required by Title 30 Texas Administrative Code (TAC) Chapter 305, certain regulations appear as standard conditions in waste discharge permits. 30 TAC §§ 305.121 - 305.129 (relating to Permit Characteristics and Conditions) as promulgated under the Texas Water Code §§ 5.103 and 5.105, and the Texas Health and Safety Code §§ 361.017 and 361.024(a), establish the characteristics and standards for waste discharge permits, including sewage sludge, and those sections of 40 Code of Federal Regulations (CFR) Part 122 adopted by reference by the Commission. The following text includes these conditions and incorporates them into this permit. All definitions in Section 26.001 of the Texas Water Code and 30 TAC Chapter 305 shall apply to this permit and are incorporated by reference. Some specific definitions of words or phrases used in this permit are as follows:

1. Flow Measurements

- a. Annual average flow - the arithmetic average of all daily flow determinations taken within the preceding 12 consecutive calendar months. The annual average flow determination shall consist of daily flow volume determinations made by a totalizing meter, charted on a chart recorder and limited to major domestic wastewater discharge facilities with a 1 million gallons per day or greater permitted flow.
- b. Daily average flow - the arithmetic average of all determinations of the daily flow within a period of one calendar month. The daily average flow determination shall consist of determinations made on at least four separate days. If instantaneous measurements are used to determine the daily flow, the determination shall be the arithmetic average of all instantaneous measurements taken during that month. Daily average flow determination for intermittent discharges shall consist of a minimum of three flow determinations on days of discharge.
- c. Daily maximum flow - the highest total flow for any 24-hour period in a calendar month.
- d. Instantaneous flow - the measured flow during the minimum time required to interpret the flow measuring device.
- e. 2-hour peak flow (domestic wastewater treatment plants) - the maximum flow sustained for a two-hour period during the period of daily discharge. The average of multiple measurements of instantaneous maximum flow within a two-hour period may be used to calculate the 2-hour peak flow.
- f. Maximum 2-hour peak flow (domestic wastewater treatment plants) - the highest 2-hour peak flow for any 24-hour period in a calendar month.

2. Concentration Measurements

- a. Daily average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar month, consisting of at least four separate representative measurements.
 - i. For domestic wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values in the previous four consecutive month period consisting of at least four measurements shall be utilized as the daily average concentration.
 - ii. For all other wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values taken during the month shall be utilized as the daily average concentration.
- b. 7-day average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar week, Sunday through Saturday.
- c. Daily maximum concentration - the maximum concentration measured on a single day, by the sample type specified in the permit, within a period of one calendar month.
- d. Daily discharge - the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in terms of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the sampling day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the sampling day.

The "daily discharge" determination of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the "daily discharge" determination of concentration shall be the arithmetic average (weighted by flow value) of all samples collected during that day.

- e. Fecal coliform bacteria concentration - the number of colonies of fecal coliform bacteria per 100 milliliters effluent. The daily average fecal coliform bacteria concentration is a geometric mean of the values for the effluent samples collected in a calendar month. The geometric mean shall be determined by calculating the n th root of the product of all measurements made in a calendar month, where n equals the number of measurements made; or, computed as the antilogarithm of the arithmetic mean of the logarithms of all measurements made in a calendar month. For any measurement of fecal coliform bacteria equaling zero, a substituted value of one shall be made for input into either computation method. The 7-day average for fecal coliform bacteria is the geometric mean of the values for all effluent samples collected during a calendar week.
- f. Daily average loading (lbs/day) - the arithmetic average of all daily discharge loading calculations during a period of one calendar month. These calculations must be made for each day of the month that a parameter is analyzed. The daily discharge, in terms of mass (lbs/day), is calculated as $(\text{Flow, MGD} \times \text{Concentration, mg/l} \times 8.34)$.
- g. Daily maximum loading (lbs/day) - the highest daily discharge, in terms of mass (lbs/day), within a period of one calendar month.

3. Sample Type

- a. Composite sample - For domestic wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC § 319.9 (a). For industrial wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC § 319.9 (b).
 - b. Grab sample - an individual sample collected in less than 15 minutes.
- 4. Treatment Facility (facility) - wastewater facilities used in the conveyance, storage, treatment, recycling, reclamation and/or disposal of domestic sewage, industrial wastes, agricultural wastes, recreational wastes, or other wastes including sludge handling or disposal facilities under the jurisdiction of the Commission.
 - 5. The term "sewage sludge" is defined as solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in 30 TAC Chapter 312. This includes the solids which have not been classified as hazardous waste separated from wastewater by unit processes.
 - 6. Bypass - the intentional diversion of a waste stream from any portion of a treatment facility.

MONITORING AND REPORTING REQUIREMENTS

1. Self-Reporting

Monitoring results shall be provided at the intervals specified in the permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling and reporting in accordance with 30 TAC §§ 319.4 - 319.12. Unless otherwise specified, a monthly effluent report shall be submitted each month, to the Enforcement Division (MC 224), by the 20th day of the following month for each discharge which is described by this permit whether or not a discharge is made for that month. Monitoring results must be reported on an approved self-report form, that is signed and certified as required by Monitoring and Reporting Requirements No. 10.

As provided by state law, the permittee is subject to administrative, civil and criminal penalties, as applicable, for negligently or knowingly violating the Clean Water Act, the Texas Water Code, Chapters 26, 27, and 28, and Texas Health and Safety Code, Chapter 361, including but not limited to knowingly making any false statement, representation, or certification on any report, record, or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, or falsifying, tampering with or knowingly rendering inaccurate any monitoring device or method required by this permit or violating any other requirement imposed by state or federal regulations.

2. Test Procedures

Unless otherwise specified in this permit, test procedures for the analysis of pollutants shall comply with procedures specified in 30 TAC §§ 319.11 - 319.12. Measurements, tests and calculations shall be accurately accomplished in a representative manner.

3. Records of Results

- a. Monitoring samples and measurements shall be taken at times and in a manner so as to be representative of the monitored activity.
- b. Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), monitoring and reporting records, including strip charts and records of calibration and maintenance, copies of all records required by this permit, records of all data used to complete the application for this permit, and the certification required by 40 CFR § 264.73(b)(9) shall be retained at the facility site, or shall be readily available for review by a TCEQ representative for a period of three years from the date of the record or sample, measurement, report, application or certification. This period shall be extended at the request of the Executive Director.
- c. Records of monitoring activities shall include the following:
 - i. date, time and place of sample or measurement;
 - ii. identity of individual who collected the sample or made the measurement.
 - iii. date and time of analysis;
 - iv. identity of the individual and laboratory who performed the analysis;
 - v. the technique or method of analysis; and
 - vi. the results of the analysis or measurement and quality assurance/quality control records.

The period during which records are required to be kept shall be automatically extended to the date of the final disposition of any administrative or judicial enforcement action that may be instituted against the permittee.

4. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit using approved analytical methods as specified above, all results of such monitoring shall be included in the calculation and reporting of the values submitted on the approved self-report form. Increased frequency of sampling shall be indicated on the self-report form.

5. Calibration of Instruments

All automatic flow measuring or recording devices and all totalizing meters for measuring flows shall be accurately calibrated by a trained person at plant start-up and as often thereafter as necessary to ensure accuracy, but not less often than annually unless authorized by the Executive Director for a longer period. Such person shall verify in writing that the device is operating properly and giving accurate results. Copies of the verification shall be retained at the facility site and/or shall be readily available for review by a TCEQ representative for a period of three years.

6. Compliance Schedule Reports

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date to the Regional Office and the Enforcement Division (MC 224).

7. Noncompliance Notification

- a. In accordance with 30 TAC § 305.125(9) any noncompliance which may endanger human health or safety, or the environment shall be reported by the permittee to the TCEQ. Report of such information shall be provided orally or by facsimile transmission (FAX) to the Regional Office within 24 hours of becoming aware of the noncompliance. A written submission of such information shall also be provided by the permittee to the Regional Office and the Enforcement Division (MC 224) within five working days of becoming aware of the noncompliance. The written submission shall contain a description of the noncompliance and its cause; the potential danger to human health or safety, or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.
- b. The following violations shall be reported under Monitoring and Reporting Requirement 7.a.:
 - i. Unauthorized discharges as defined in Permit Condition 2(g).
 - ii. Any unanticipated bypass which exceeds any effluent limitation in the permit.
 - iii. Violation of a permitted maximum daily discharge limitation for pollutants listed specifically in the Other

Requirements section of an Industrial TPDES permit.

- c. In addition to the above, any effluent violation which deviates from the permitted effluent limitation by more than 40% shall be reported by the permittee in writing to the Regional Office and the Enforcement Division (MC 224) within 5 working days of becoming aware of the noncompliance.
 - d. Any noncompliance other than that specified in this section, or any required information not submitted or submitted incorrectly, shall be reported to the Enforcement Division (MC 224) as promptly as possible. For effluent limitation violations, noncompliances shall be reported on the approved self-report form.
8. In accordance with the procedures described in 30 TAC §§ 35.301 - 35.303 (relating to Water Quality Emergency and Temporary Orders) if the permittee knows in advance of the need for a bypass, it shall submit prior notice by applying for such authorization.
9. Changes in Discharges of Toxic Substances

All existing manufacturing, commercial, mining, and silvicultural permittees shall notify the Regional Office, orally or by facsimile transmission within 24 hours, and both the Regional Office and the Enforcement Division (MC 224) in writing within five (5) working days, after becoming aware of or having reason to believe:

- a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant listed at 40 CFR Part 122, Appendix D, Tables II and III (excluding Total Phenols) which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
 - i. One hundred micrograms per liter (100 µg/L);
 - ii. Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
 - iii. Five (5) times the maximum concentration value reported for that pollutant in the permit application; or
 - iv. The level established by the TCEQ.
- b. That any activity has occurred or will occur which would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
 - i. Five hundred micrograms per liter (500 µg/L);
 - ii. One milligram per liter (1 mg/L) for antimony;
 - iii. Ten (10) times the maximum concentration value reported for that pollutant in the permit application; or
 - iv. The level established by the TCEQ.

10. Signatories to Reports

All reports and other information requested by the Executive Director shall be signed by the person and in the manner required by 30 TAC § 305.128 (relating to Signatories to Reports).

11. All Publicly Owned Treatment Works (POTWs) must provide adequate notice to the Executive Director of the following:
- a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of the CWA if it were directly discharging those pollutants;
 - b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit; and
 - c. For the purpose of this paragraph, adequate notice shall include information on:
 - i. The quality and quantity of effluent introduced into the POTW; and
 - ii. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

PERMIT CONDITIONS

1. General

- a. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted

incorrect information in an application or in any report to the Executive Director, it shall promptly submit such facts or information.

- b. This permit is granted on the basis of the information supplied and representations made by the permittee during action on an application, and relying upon the accuracy and completeness of that information and those representations. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked, in whole or in part, in accordance with 30 TAC Chapter 305, Subchapter D, during its term for good cause including, but not limited to, the following:
 - i. Violation of any terms or conditions of this permit;
 - ii. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
 - iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.
- c. The permittee shall furnish to the Executive Director, upon request and within a reasonable time, any information to determine whether cause exists for amending, revoking, suspending or terminating the permit. The permittee shall also furnish to the Executive Director, upon request, copies of records required to be kept by the permit.

2. Compliance

- a. Acceptance of the permit by the person to whom it is issued constitutes acknowledgment and agreement that such person will comply with all the terms and conditions embodied in the permit, and the rules and other orders of the Commission.
- b. The permittee has a duty to comply with all conditions of the permit. Failure to comply with any permit condition constitutes a violation of the permit and the Texas Water Code or the Texas Health and Safety Code, and is grounds for enforcement action, for permit amendment, revocation or suspension, or for denial of a permit renewal application or an application for a permit for another facility.
- c. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.
- d. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal or other permit violation which has a reasonable likelihood of adversely affecting human health or the environment.
- e. Authorization from the Commission is required before beginning any change in the permitted facility or activity that may result in noncompliance with any permit requirements.
- f. A permit may be amended, suspended and reissued, or revoked for cause in accordance with 30 TAC §§ 305.62 and 305.66 and Texas Water Code Section 7.302. The filing of a request by the permittee for a permit amendment, suspension and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.
- g. There shall be no unauthorized discharge of wastewater or any other waste. For the purpose of this permit, an unauthorized discharge is considered to be any discharge of wastewater into or adjacent to water in the state at any location not permitted as an outfall or otherwise defined in the Other Requirements section of this permit.
- h. In accordance with 30 TAC § 305.535(a), the permittee may allow any bypass to occur from a TPDES permitted facility which does not cause permitted effluent limitations to be exceeded or an unauthorized discharge to occur, but only if the bypass is also for essential maintenance to assure efficient operation.
- i. The permittee is subject to administrative, civil, and criminal penalties, as applicable, under Texas Water Code §§ 7.051 - 7.075 (relating to Administrative Penalties), 7.101 - 7.111 (relating to Civil Penalties), and 7.141 - 7.202 (relating to Criminal Offenses and Penalties) for violations including, but not limited to, negligently or knowingly violating the federal Clean Water Act, §§ 301, 302, 306, 307, 308, 318, or 405, or any condition or limitation implementing any sections in a permit issued under the CWA § 402, or any requirement imposed in a pretreatment program approved under the CWA §§ 402 (a)(3) or 402 (b)(8).

3. Inspections and Entry

- a. Inspection and entry shall be allowed as prescribed in the Texas Water Code Chapters 26, 27, and 28, and Texas Health and Safety Code Chapter 361.

- b. The members of the Commission and employees and agents of the Commission are entitled to enter any public or private property at any reasonable time for the purpose of inspecting and investigating conditions relating to the quality of water in the state or the compliance with any rule, regulation, permit or other order of the Commission. Members, employees, or agents of the Commission and Commission contractors are entitled to enter public or private property at any reasonable time to investigate or monitor or, if the responsible party is not responsive or there is an immediate danger to public health or the environment, to remove or remediate a condition related to the quality of water in the state. Members, employees, Commission contractors, or agents acting under this authority who enter private property shall observe the establishment's rules and regulations concerning safety, internal security, and fire protection, and if the property has management in residence, shall notify management or the person then in charge of his presence and shall exhibit proper credentials. If any member, employee, Commission contractor, or agent is refused the right to enter in or on public or private property under this authority, the Executive Director may invoke the remedies authorized in Texas Water Code Section 7.002. The statement above, that Commission entry shall occur in accordance with an establishment's rules and regulations concerning safety, internal security, and fire protection, is not grounds for denial or restriction of entry to any part of the facility, but merely describes the Commission's duty to observe appropriate rules and regulations during an inspection.

4. Permit Amendment and/or Renewal

- a. The permittee shall give notice to the Executive Director as soon as possible of any planned physical alterations or additions to the permitted facility if such alterations or additions would require a permit amendment or result in a violation of permit requirements. Notice shall also be required under this paragraph when:
 - i. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in accordance with 30 TAC § 305.534 (relating to New Sources and New Dischargers); or
 - ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements in Monitoring and Reporting Requirements No. 9;
 - iii. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.
- b. Prior to any facility modifications, additions, or expansions that will increase the plant capacity beyond the permitted flow, the permittee must apply for and obtain proper authorization from the Commission before commencing construction.
- c. The permittee must apply for an amendment or renewal at least 180 days prior to expiration of the existing permit in order to continue a permitted activity after the expiration date of the permit. If an application is submitted prior to the expiration date of the permit, the existing permit shall remain in effect until the application is approved, denied, or returned. If the application is returned or denied, authorization to continue such activity shall terminate upon the effective date of the action. If an application is not submitted prior to the expiration date of the permit, the permit shall expire and authorization to continue such activity shall terminate.
- d. Prior to accepting or generating wastes which are not described in the permit application or which would result in a significant change in the quantity or quality of the existing discharge, the permittee must report the proposed changes to the Commission. The permittee must apply for a permit amendment reflecting any necessary changes in permit conditions, including effluent limitations for pollutants not identified and limited by this permit.
- e. In accordance with the Texas Water Code § 26.029(b), after a public hearing, notice of which shall be given to the permittee, the Commission may require the permittee, from time to time, for good cause, in accordance with applicable laws, to conform to new or additional conditions.
- f. If any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under Section 307(a) of the Clean Water Act for a toxic pollutant which is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that established those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

5. Permit Transfer

- a. Prior to any transfer of this permit, Commission approval must be obtained. The Commission shall be notified in writing of any change in control or ownership of facilities authorized by this permit. Such notification should be sent to the Applications Review and Processing Team (MC 148) of the Water Quality Division.
- b. A permit may be transferred only according to the provisions of 30 TAC § 305.64 (relating to Transfer of Permits) and 30 TAC § 50.133 (relating to Executive Director Action on Application or WQMP update).

6. Relationship to Hazardous Waste Activities

This permit does not authorize any activity of hazardous waste storage, processing, or disposal which requires a permit or other authorization pursuant to the Texas Health and Safety Code.

7. Relationship to Water Rights

Disposal of treated effluent by any means other than discharge directly to water in the state must be specifically authorized in this permit and may require a permit pursuant to Chapter 11 of the Texas Water Code.

8. Property Rights

A permit does not convey any property rights of any sort, or any exclusive privilege.

9. Permit Enforceability

The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

10. Relationship to Permit Application

The application pursuant to which the permit has been issued is incorporated herein; provided, however, that in the event of a conflict between the provisions of this permit and the application, the provisions of the permit shall control.

11. Notice of Bankruptcy.

- a. Each permittee shall notify the executive director, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under any chapter of Title 11 (Bankruptcy) of the United States Code (11 USC) by or against:
 - i. the permittee;
 - ii. an entity (as that term is defined in 11 USC, §101(15)) controlling the permittee or listing the permit or permittee as property of the estate; or
 - iii. an affiliate (as that term is defined in 11 USC, §101(2)) of the permittee.
- b. This notification must indicate:
 - i. the name of the permittee;
 - ii. the permit number(s);
 - iii. the bankruptcy court in which the petition for bankruptcy was filed; and
 - iv. the date of filing of the petition.

OPERATIONAL REQUIREMENTS

1. The permittee shall at all times ensure that the facility and all of its systems of collection, treatment, and disposal are properly operated and maintained. This includes, but is not limited to, the regular, periodic examination of wastewater solids within the treatment plant by the operator in order to maintain an appropriate quantity and quality of solids inventory as described in the various operator training manuals and according to accepted industry standards for process control. Process control, maintenance, and operations records shall be retained at the facility site, or shall be readily available for review by a TCEQ representative, for a period of three years.
2. Upon request by the Executive Director, the permittee shall take appropriate samples and provide proper analysis in order to demonstrate compliance with Commission rules. Unless otherwise specified in this permit or otherwise ordered by the

Commission, the permittee shall comply with all applicable provisions of 30 TAC Chapter 312 concerning sewage sludge use and disposal and 30 TAC §§ 319.21 - 319.29 concerning the discharge of certain hazardous metals.

3. Domestic wastewater treatment facilities shall comply with the following provisions:
 - a. The permittee shall notify the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, in writing, of any facility expansion at least 90 days prior to conducting such activity.
 - b. The permittee shall submit a closure plan for review and approval to the Land Application Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, for any closure activity at least 90 days prior to conducting such activity. Closure is the act of permanently taking a waste management unit or treatment facility out of service and includes the permanent removal from service of any pit, tank, pond, lagoon, surface impoundment and/or other treatment unit regulated by this permit.
4. The permittee is responsible for installing prior to plant start-up, and subsequently maintaining, adequate safeguards to prevent the discharge of untreated or inadequately treated wastes during electrical power failures by means of alternate power sources, standby generators, and/or retention of inadequately treated wastewater.
5. Unless otherwise specified, the permittee shall provide a readily accessible sampling point and, where applicable, an effluent flow measuring device or other acceptable means by which effluent flow may be determined.
6. The permittee shall remit an annual water quality fee to the Commission as required by 30 TAC Chapter 21. Failure to pay the fee may result in revocation of this permit under Texas Water Code § 7.302(b)(6).
7. Documentation

For all written notifications to the Commission required of the permittee by this permit, the permittee shall keep and make available a copy of each such notification under the same conditions as self-monitoring data are required to be kept and made available. Except for information required for TPDES permit applications, effluent data, including effluent data in permits, draft permits and permit applications, and other information specified as not confidential in 30 TAC § 1.5(d), any information submitted pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted in the manner prescribed in the application form or by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, information may be made available to the public without further notice. If the Commission or Executive Director agrees with the designation of confidentiality, the TCEQ will not provide the information for public inspection unless required by the Texas Attorney General or a court pursuant to an open records request. If the Executive Director does not agree with the designation of confidentiality, the person submitting the information will be notified.

8. Facilities which generate domestic wastewater shall comply with the following provisions; domestic wastewater treatment facilities at permitted industrial sites are excluded.
 - a. Whenever flow measurements for any domestic sewage treatment facility reach 75 percent of the permitted daily average or annual average flow for three consecutive months, the permittee must initiate engineering and financial planning for expansion and/or upgrading of the domestic wastewater treatment and/or collection facilities. Whenever the flow reaches 90 percent of the permitted daily average or annual average flow for three consecutive months, the permittee shall obtain necessary authorization from the Commission to commence construction of the necessary additional treatment and/or collection facilities. In the case of a domestic wastewater treatment facility which reaches 75 percent of the permitted daily average or annual average flow for three consecutive months, and the planned population to be served or the quantity of waste produced is not expected to exceed the design limitations of the treatment facility, the permittee shall submit an engineering report supporting this claim to the Executive Director of the Commission.

If in the judgement of the Executive Director the population to be served will not cause permit noncompliance, then the requirement of this section may be waived. To be effective, any waiver must be in writing and signed by the Director of the Enforcement Division (MC 149) of the Commission, and such waiver of these requirements will be reviewed upon expiration of the existing permit; however, any such waiver shall not be interpreted as condoning or excusing any violation of any permit parameter.

- b. The plans and specifications for domestic sewage collection and treatment works associated with any domestic permit must be approved by the Commission, and failure to secure approval before commencing construction of such works or making a discharge is a violation of this permit and each day is an additional violation until approval has been secured.

- c. Permits for domestic wastewater treatment plants are granted subject to the policy of the Commission to encourage the development of area-wide waste collection, treatment and disposal systems. The Commission reserves the right to amend any domestic wastewater permit in accordance with applicable procedural requirements to require the system covered by this permit to be integrated into an area-wide system, should such be developed; to require the delivery of the wastes authorized to be collected in, treated by or discharged from said system, to such area-wide system; or to amend this permit in any other particular to effectuate the Commission's policy. Such amendments may be made when the changes required are advisable for water quality control purposes and are feasible on the basis of waste treatment technology, engineering, financial, and related considerations existing at the time the changes are required, exclusive of the loss of investment in or revenues from any then existing or proposed waste collection, treatment or disposal system.
9. Domestic wastewater treatment plants shall be operated and maintained by sewage plant operators holding a valid certificate of competency at the required level as defined in 30 TAC Chapter 30.
10. For Publicly Owned Treatment Works (POTWs), the 30-day average (or monthly average) percent removal for BOD and TSS shall not be less than 85 percent, unless otherwise authorized by this permit.
11. Facilities which generate industrial solid waste as defined in 30 TAC § 335.1 shall comply with these provisions:
- a. Any solid waste, as defined in 30 TAC § 335.1 (including but not limited to such wastes as garbage, refuse, sludge from a waste treatment, water supply treatment plant or air pollution control facility, discarded materials, discarded materials to be recycled, whether the waste is solid, liquid, or semisolid), generated by the permittee during the management and treatment of wastewater, must be managed in accordance with all applicable provisions of 30 TAC Chapter 335, relating to Industrial Solid Waste Management.
 - b. Industrial wastewater that is being collected, accumulated, stored, or processed before discharge through any final discharge outfall, specified by this permit, is considered to be industrial solid waste until the wastewater passes through the actual point source discharge and must be managed in accordance with all applicable provisions of 30 TAC Chapter 335.
 - c. The permittee shall provide written notification, pursuant to the requirements of 30 TAC § 335.8(b)(1), to the Environmental Cleanup Section (MC 127) of the Remediation Division informing the Commission of any closure activity involving an Industrial Solid Waste Management Unit, at least 90 days prior to conducting such an activity.
 - d. Construction of any industrial solid waste management unit requires the prior written notification of the proposed activity to the Registration and Reporting Section (MC 129) of the Permitting and Remediation Support Division. No person shall dispose of industrial solid waste, including sludge or other solids from wastewater treatment processes, prior to fulfilling the deed recordation requirements of 30 TAC § 335.5.
 - e. The term "industrial solid waste management unit" means a landfill, surface impoundment, waste-pile, industrial furnace, incinerator, cement kiln, injection well, container, drum, salt dome waste containment cavern, or any other structure vessel, appurtenance, or other improvement on land used to manage industrial solid waste.
 - f. The permittee shall keep management records for all sludge (or other waste) removed from any wastewater treatment process. These records shall fulfill all applicable requirements of 30 TAC Chapter 335 and must include the following, as it pertains to wastewater treatment and discharge:
 - i. Volume of waste and date(s) generated from treatment process;
 - ii. Volume of waste disposed of on-site or shipped off-site;
 - iii. Date(s) of disposal;
 - iv. Identity of hauler or transporter;
 - v. Location of disposal site; and
 - vi. Method of final disposal.
- The above records shall be maintained on a monthly basis. The records shall be retained at the facility site, or shall be readily available for review by authorized representatives of the TCEQ for at least five years.
12. For industrial facilities to which the requirements of 30 TAC Chapter 335 do not apply, sludge and solid wastes, including tank cleaning and contaminated solids for disposal, shall be disposed of in accordance with Chapter 361 of the Texas Health and Safety Code.

OTHER REQUIREMENTS

1. Violations of daily maximum limitations for the following pollutants shall be reported orally or by facsimile to TCEQ Region 5, within 24 hours from the time the permittee becomes aware of the violation followed by a written report within five working days to TCEQ Region 5 and the Enforcement Division (MC 224):

<u>POLLUTANT</u>	<u>MAL (mg/L)</u>
Selenium (Total)	0.010
Copper (Total)	0.010

Test methods utilized shall be sensitive enough to demonstrate compliance with the permit effluent limitations. Permit compliance/noncompliance determinations will be based on the effluent limitations contained in this permit with consideration given to the minimum analytical level (MAL) for the parameters specified above.

When an analysis of an effluent sample for any of the parameters listed above indicates no detectable levels above the MAL and the test method detection level is as sensitive as the specified MAL, a value of zero (0) shall be used for that measurement when determining calculations and reporting requirements for the self-reporting form. This applies to determinations of daily maximum concentration, calculations of loading and daily averages, and other reportable results.

When a reported value is zero (0) based on this MAL provision, the permittee shall submit the following statement with the self-reporting form either as a separate attachment to the form or as a statement in the comments section of the form.

"The reported value(s) of zero (0) for _____ [list parameter(s)] _____ on the self-reporting form for _____ [monitoring period date range] _____ is based on the following conditions: 1) the analytical method used had a method detection level as sensitive as the MAL specified in the permit, and 2) the analytical results contained no detectable levels above the specified MAL."

When an analysis of an effluent sample for a parameter indicates no detectable levels and the test method detection level is not as sensitive as the MAL specified in the permit, or an MAL is not specified in the permit for that parameter, the level of detection achieved shall be used for that measurement when determining calculations and reporting requirements for the self-reporting form. A zero (0) may not be used.

2. There shall be no discharge of polychlorinated biphenyl transformer fluid.

3. DEFINITIONS

- A. The term "10-year, 24-hour rainfall event" shall mean a rainfall event with the probable recurrence interval of once in ten years as defined by the National Weather Service in Technical Paper No. 40, "Rainfall Frequency Atlas of the United States," May 1961, and subsequent amendments, or equivalent regional or state rainfall event and facility design, construction, and operation resides with the permittee.
- B. The term "total residual chlorine" (or total residual oxidants for intake water with bromides) means the value obtained using the amperometric method for total residual chlorine described in 40 CFR Part 136. The permittee may use the DPD spectrophotometric method (EPA Method 330.5) upon written notification of the Executive Director, provided that EPA has modified the existing effluent limitation guidelines (40 CFR Part 423) or has provided the permittee with documentation that this new test method is appropriate for use by steam electric power generating facilities.

Total residual chlorine may not be discharged from any single generating unit for more than two hours per day unless the discharger demonstrates to the permitting authority that discharge for more than two hours is required for macroinvertebrate control.

Simultaneous multi-unit chlorination is permitted.

- C. The term "metal cleaning waste" means any wastewater resulting from cleaning (with or without chemical compounds) any metal process equipment including, but not limited to, boiler tube cleaning, boiler fireside cleaning, and air preheater cleaning.

The term "chemical metal cleaning waste" means any wastewater resulting from the cleaning of any metal process equipment with chemical compounds, including, but not limited to, boiler tube cleaning.

- D. The term "low volume waste" includes "utility waste waters" and "water treatment wastes". "Utility waste waters" include, but are not limited to: wet scrubber air pollution control systems, evaporator blowdown, boiler blowdown, laboratory and sampling streams, floor drainage, cooling tower basin cleaning wastes, and blowdown from recirculating house service water systems. "Water treatment wastes" include, but are not limited to: ion exchange water treatment system wastes, demineralizer backwash, cold lime water treatment wastes, reverse osmosis waste, and water treatment system filter backwash. Sanitary and air conditioning wastes are not included.
- E. The term "once through cooling water" means water passed through the main cooling condensers in one or two passes for the purpose of removing waste heat.
- F. The term "ash transport water" shall mean water used in the transport of either fly ash or bottom ash.
- G. The term "coal pile runoff" means the rainfall runoff from or through any coal, ash, or other material storage pile.

Any untreated overflow from facilities designed, constructed, and operated to treat the volume of "coal pile runoff" which is associated with a 10-year, 24-hour rainfall event shall not be subject to the limitations specified on page 2d of this permit. The burden of proof regarding the rainfall event and facility design, construction, and operation resides with the permittee.

- H. Daily average temperature is defined as the flow weighted average temperature (FWAT) shall be computed and recorded on a daily basis. FWAT shall be computed at equal time intervals not greater than two hours. The method of calculating FWAT is as follows:

$$FWAT = \frac{\sum (INSTANTANEOUS FLOW \times INSTANTANEOUS TEMPERATURE)}{\sum (INSTANTANEOUS FLOW)}$$

The "daily average temperature" shall be the arithmetic average of all FWAT's calculated during the calendar month.

The "daily maximum temperature" shall be the highest FWAT calculated during the calendar month.

4. This provision supersedes and replaces Provision 1, Paragraph 1 of Monitoring and Reporting Requirements found on Page 4 of this permit.

Monitoring results shall be provided at the intervals specified in the permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling and reporting in accordance with 30 TAC §§ 319.4 - 319.12. Unless otherwise specified, a monthly effluent report shall be submitted each month, to the location(s) specified on the reporting form or the instruction sheet, by the 25th day of the following month for each discharge which is described by this permit whether or not a discharge is made for that month. Monitoring results must be reported on the approved TPDES self-report form, Discharge Monitoring Report (DMR) Form EPA No. 3320-1, signed and certified as required by Monitoring and Reporting Requirements No. 10.

5. PONDS

A. The following table describes the ponds recognized through this permit:

Pond No.	Wastewater Type	Associated Outfall	Surface Area (Acres)	Capacity (Acre/ft)	Liner Type
Lignite Runoff Pond	Storm water from the lignite storage area (coal pile runoff)	003	5.18	28.59	Clay
FGD/Fly Ash Landfill Pond	Storm water from the FGD/Fly ash landfill, wastes from the Lignite Runoff Pond	004	12.88	25.0	Clay
Limestone Runoff Pond	Storm water from the limestone storage area	005	3.22	8.74	Clay
Ash Pond	Ash transport water, low volume wastes (boiler blowdown and demineralizer regenerant)	006	71.76	187.97	Clay
Metal Cleaning Waste Pond	Metal cleaning wastes and chemical metal cleaning wastes	N/A	2.42	11.96	Clay

B. The Metal Cleaning Waste Pond may contain metal cleaning waste and may be used for temporary storage of storm water from the lignite storage area (coal pile runoff), wastewater from the ash pond, and storm water from the FGD/Fly ash landfill. Wastewater held in this pond may be routed to Plant "X" for treatment. Other wastes may be routed to this pond with prior approval from the Executive Director.

C. Wastewater from any of the following ponds: Lignite Runoff Pond, FGD/Fly Ash Landfill Pond, Limestone Runoff Pond, Ash Pond, Metal Cleaning Waste Pond, and surge pond may be recycled to the flue gas desulfurization system for use as a process wastewater.

D. All newly constructed process wastewater ponds shall be lined in compliance with one of the following requirements:

1. Soil Liner: The soil liner shall contain at least 3 feet of clay-rich (liquid limit greater than or equal to 30 and plasticity index greater than or equal to 15) soil material along the sides and bottom of the pond compacted in lifts of no more than 9 inches, to 95% standard proctor density at the optimum moisture content to achieve a permeability equal to or less than 1×10^{-7} cm/sec.
2. Plastic/Rubber Liner: The liner shall be either a plastic or rubber membrane liner at least 30 mils in thickness which completely covers the sides and the bottom of the pond and which is not subject to degradation due to reaction with wastewater with which it will come into contact. If this lining material is vulnerable to ozone or ultraviolet deterioration it should be covered with a protective layer of soil of at least 6 inches. A leak detection system is also required.
3. Alternate Liner: The permittee shall submit plans for any other pond lining method. Pond liner plans must be approved in writing by the Executive Director of the Texas Commission on Environmental Quality prior to pond construction.

The permittee shall notify the TCEQ Regional Office upon completion of construction of the pond and at least a week prior to its use. Certification of the lining specifications shall be provided by a Texas licensed professional engineer and shall be available for inspection by TCEQ personnel upon request. For new construction, the certification and the test results of soils forming the bottom and sides of the pond shall be submitted to the TCEQ, Wastewater Permitting Section (MC-148) and Regional Office for review prior

to discharging any wastewaters into the ponds. Permeability tests shall be made with material typical of the expected use.

- E. All wastewater retention ponds shall be operated in such a manner as to maintain a minimum freeboard of two feet.

6. PLANT "X"

The permittee is authorized to discharge treated wastewater from Plant "X" via Outfall 202, subject to effluent limitations, monitoring requirements, and other conditions listed on page 2b of this permit. Plant "X" may receive the following wastes for treatment and disposal via Outfall 202: metal cleaning wastes, chemical metal cleaning wastes, wastewater from the Lignite Runoff Pond (coal pile runoff), wastewater from the Ash Pond (ash transport water, low volume wastes consisting of boiler blowdown and demineralizer regenerant), storm water from the FGD/Fly ash landfill. Other wastes may be treated at Plant "X" with prior approval from the Executive Director.

7. MIXING ZONE DEFINITIONS

Chronic toxic criteria apply at the edge of the mixing zone. The mixing zone for Outfall 002 is defined as a volume of water within a radius of 200 feet extending over the receiving water from the point where the discharge reaches Brandy Branch Reservoir.

For Outfall 006, there is no mixing zone established for this discharge to an intermittent stream. Acute toxic criteria apply at the point of discharge.

8. Monitoring results shall be provided at the intervals specified in the permit. For pollutants which are monitored annually, effluent reports shall be submitted in September of each year. For pollutants which are monitored four times per year, the first effluent report shall be submitted three months after the date of permit issuance and subsequent reports every three months thereafter.

9. SELENIUM MONITORING PROGRAM

The permittee shall comply with all necessary sampling requirements in the Selenium Monitoring Program as approved by the Executive Director. Revisions to the Selenium Monitoring Program must be approved by the Water Quality Assessment Team (MC-150), Water Quality Division, TCEQ prior to initiating any modifications.

10. This requirement is applicable to the treatment and disposal of domestic wastewater at Outfall 302 only.

On-site disposal of sewage sludge is not authorized. The permittee shall ensure that all sewage sludge which is not a hazardous waste (as defined in 30 TAC Chapter 335) is handled, transported, and disposed of in compliance with the applicable provisions of 30 TAC Chapter 312. The permittee shall ensure that all sewage sludge which is a hazardous waste (as defined in 30 TAC Chapter 335) is handled, transported, and disposed of in compliance with the applicable provisions of 30 TAC Chapter 335. The permittee shall keep records of all sludges removed from the wastewater treatment plant site. Such records will include the following information:.

- a. Volume (dry weight basis) of sludge disposed
- b. Date of disposal
- c. Identity and registration number of hauler
- d. Location and registration or permit number of disposal site
- e. Method of final disposal

The above records shall be maintained on a monthly basis and be available at the plant site for inspection by authorized representatives of the TCEQ for at least five years.

11. Dust Suppression

The permittee is authorized to utilize effluent from the ash pond associated with Outfall 006 for on-site dust suppression at the Henry W. Pirkey Power Plant. With respect to utilization of effluent for dust suppression, the permittee shall comply with the following requirements.

- a. Dust suppression practices shall be designed and managed so as to prevent runoff, ponding of effluent, or contamination of ground and surface waters and to prevent the occurrence of nuisance conditions in the area.
- b. With the exception of roads at the facility, the application of effluent for dust suppression shall be accomplished only when the area specified is not in use.
- c. Spray fixtures for dust suppression systems shall be of such design that they cannot be operated by unauthorized personnel.
- d. The permittee shall keep records of volumes, times, and areas where effluent is used for dust suppression. These records shall be updated daily and maintained onsite for review by Commission personnel for a minimum of three years.
- e. Adequate signs shall be erected stating that the dust suppression water are from a non-potable water supply. Said signs shall consist of a red slash superimposed over the international symbol for drinking water accompanied by the message "Do not drink the water" in both English and Spanish.

12. COOLING WATER INTAKE STRUCTURE REQUIREMENTS (Phase II)

✓ This facility is subject to Title 40 Code of Federal Regulations Part 125, Subpart J. The permittee shall submit Worksheet 11.0 of the Industrial Technical Report (and all required information therein) and the completed Comprehensive Demonstration Study (where required by 40 CFR Part 125, Subpart J) to the Industrial Team (MC-148) of the Water Quality Division no later than January 7, 2008.

13. Table 1, shall be completed with the analytical results for Outfalls 004, and 005 and sent to the TCEQ, Wastewater Permitting Section (MC-148), within the first 180 days after initial discharge that is representative of regular operations. Based on a technical review of the submitted analytical results, an amendment may be initiated by TCEQ staff to include additional effluent limitations and/or monitoring requirements.

Analysis is required for all pollutants. Wastewater shall be sampled and analyzed for those parameters listed in Table 1 for a minimum of one (1) separate sampling event.

TABLE 1: Complete table required for external outfalls 004 and 005.

Outfall No.:	<input type="checkbox"/> C <input type="checkbox"/> G	Effluent Concentration (mg/l)					
Pollutants		Samp. 1	Samp. 2	Samp. 3	Samp. 4	Average	
BOD (5-day)							
CBOD (5-day)							
Chemical Oxygen Demand							
Total Organic Carbon							
Ammonia Nitrogen							
Total Suspended Solids							
Nitrate Nitrogen							
Total Organic Nitrogen							
Total Phosphorus							
Oil and Grease							
Total Residual Chlorine							
Total Dissolved Solids							
Sulfate							
Chloride							
Fluoride							
Fecal Coliform							
Temperature(°F)							
pH (Standard Units; min/max)							
		Effluent Concentration (µg/l)					MAL (µg/l)
Total Aluminum							30
Total Antimony							30
Total Arsenic							10
Total Barium							10
Total Beryllium							5
Total Cadmium							1
Total Chromium							10
Trivalent Chromium							N/A
Hexavalent Chromium							10
Total Copper							10
Cyanide							20
Total Lead							5
Total Mercury							0.2
Total Nickel							10
Total Selenium							10
Total Silver							2.0
Total Thallium							10
Total Zinc							5

CHRONIC BIOMONITORING REQUIREMENTS: FRESHWATER

The provisions of this Section apply to Outfall 002, Chronic for whole effluent toxicity testing (biomonitoring).

1. Scope, Frequency and Methodology

- a. The permittee shall test the effluent for toxicity in accordance with the provisions below. Such testing will determine if an appropriately dilute effluent sample adversely affects the survival, reproduction, or growth of the test organisms.
- b. The permittee shall conduct the following toxicity tests utilizing the test organisms, procedures and quality assurance requirements specified in this Part of the permit and in accordance with "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition" (EPA-821-R-02-013), or the most recent update thereof:
 - 1) Chronic static renewal survival and reproduction test using the water flea (*Ceriodaphnia dubia*) (Method 1002.0 or the most recent update thereof). This test should be terminated when 60% of the surviving adults in the control produce three broods. This test shall be conducted once per quarter.
 - 2) Chronic static renewal 7-day larval survival and growth test using the fathead minnow (*Pimephales promelas*) (Method 1000.0 or the most recent update thereof). A minimum of five replicates with eight organisms per replicate shall be used in the control and in each dilution. This test shall be conducted once per quarter.

The permittee must perform and report a valid test for each test species during the prescribed reporting period. An invalid test must be repeated during the same reporting period. An invalid test is herein defined as any test failing to satisfy the test acceptability criteria, procedures, and quality assurance requirements specified in the test methods and permit. All test results, valid or invalid, must be submitted as described below.

- c. The permittee shall use five effluent dilution concentrations and a control in each toxicity test. These additional effluent concentrations are 32%, 42%, 56%, 75%, and 100% effluent. The critical dilution, defined as 100% effluent, is the effluent concentration representative of the proportion of effluent in the receiving water during critical low flow or critical mixing conditions.
- d. This permit may be amended to require a Whole Effluent Toxicity (WET) limit, Chemical-Specific (CS) limits, a Best Management Practice (BMP), additional toxicity testing, and/or other appropriate actions to address toxicity. The permittee may be required to conduct additional biomonitoring tests and/or a Toxicity Reduction Evaluation (TRE) if biomonitoring data indicate multiple numbers of unconfirmed toxicity events.
- e. Testing Frequency Reduction
 - 1) If none of the first four consecutive quarterly tests demonstrates significant lethal or sub-lethal effects, the permittee may submit this information in writing and, upon approval from the Water Quality Standards Team, reduce the testing frequency to once per six months for the invertebrate test species and once per year for the vertebrate test species.
 - 2) If one or more of the first four consecutive quarterly tests demonstrates significant sub-lethal effects, the permittee shall continue quarterly testing for that species until four consecutive quarterly tests demonstrate no significant sub-lethal effects. At that time, the permittee may apply for the appropriate testing frequency reduction for that species.

- 3) If one or more of the first four consecutive quarterly tests demonstrates significant lethal effects, the permittee shall continue quarterly testing for that species until the permit is reissued. If a testing frequency reduction had been previously granted and a subsequent test demonstrates significant lethal effects, the permittee will resume a quarterly testing frequency for that species until the permit is reissued.

2. Required Toxicity Testing Conditions

- a. Test Acceptance - The permittee shall repeat any toxicity test, including the control and all effluent dilutions, which fails to meet any of the following criteria:
 - 1) a control mean survival of 80% or greater;
 - 2) a control mean number of water flea neonates per surviving adult of 15 or greater;
 - 3) a control mean dry weight of surviving fathead minnow larvae of 0.25 mg or greater;
 - 4) a control Coefficient of Variation percent (CV%) of 40 or less between replicates for the young of surviving females in the water flea reproduction and survival test; and the growth and survival endpoints in the fathead minnow growth and survival test.
 - 5) a critical dilution CV% of 40 or less for young of surviving females in the water flea reproduction and survival test; and the growth and survival endpoints for the fathead minnow growth and survival test. However, if statistically significant lethal or nonlethal effects are exhibited at the critical dilution, a CV% greater than 40 shall not invalidate the test.
 - 6) a Percent Minimum Significant Difference of 47 or less for water flea reproduction;
 - 7) a Percent Minimum Significant Difference of 30 or less for fathead minnow growth.
- b. Statistical Interpretation
 - 1) For the water flea survival test, the statistical analyses used to determine if there is a significant difference between the control and an effluent dilution shall be Fisher's Exact Test as described in the "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition" (EPA-821-R-02-013), or the most recent update thereof.
 - 2) For the water flea reproduction test and the fathead minnow larval survival and growth tests, the statistical analyses used to determine if there is a significant difference between the control and an effluent dilution shall be in accordance with the methods described in the "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition" (EPA-821-R-02-013), or the most recent update thereof.
 - 3) The permittee is responsible for reviewing test concentration-response relationships to ensure that calculated test-results are interpreted and reported correctly. The EPA manual, "Method Guidance and Recommendation for Whole Effluent Toxicity (WET) Testing (40 CFR Part 136)" (EPA 821-B-00-004) provides guidance on determining the validity of test results.
 - 4) If significant lethality is demonstrated (that is, there is a statistically significant difference in survival at the critical dilution when compared to the control), the conditions of test acceptability are met, and the survival of the test organisms are equal to or greater than 80% in the critical dilution and all dilutions below that, then the permittee shall report a survival No Observed Effect Concentration (NOEC) of not less than the critical dilution

for the reporting requirements.

- 5) The NOEC is defined as the greatest effluent dilution at which no significant effect is demonstrated. The Lowest Observed Effect Concentration (LOEC) is defined as the lowest effluent dilution at which a significant effect is demonstrated. A significant effect is herein defined as a statistically significant difference at the 95% confidence level between the survival, reproduction, or growth of the test organism(s) in a specified effluent dilution compared to the survival, reproduction, or growth of the test organism(s) in the control (0% effluent).
- 6) The use of NOECs and LOECs assumes either a monotonic (continuous) concentration-response relationship or a threshold model of the concentration-response relationship. For any test result that demonstrates a non-monotonic (non-continuous) response, the NOEC should be determined based on the guidance manual referenced in Item 3 above and a full report will be submitted to the Water Quality Standards Team
- 7) Pursuant to the responsibility assigned to the permittee in Part 2.b.3), test results that demonstrate a non-monotonic (non-continuous) concentration-response relationship may be submitted, prior to the due date, for technical review. The above-referenced guidance manual will be used when making a determination of test acceptability
- 8) The Water Quality Standards Team will review test results (i.e., Table 1 and Table 2 forms) for consistency with established TCEQ rules, procedures, and permit requirements.

c. Dilution Water

- 1) Dilution water used in the toxicity tests shall be the receiving water collected as close as possible to the discharge point, but unaffected by the discharge.
- 2) Where the receiving water proves unsatisfactory as a result of preexisting instream toxicity (i.e. fails to fulfill the test acceptance criteria of item 2.a.), the permittee may substitute synthetic dilution water for the receiving water in all subsequent tests provided the unacceptable receiving water test met the following stipulations:
 - a) a synthetic lab water control was performed (in addition to the receiving water control) which fulfilled the test acceptance requirements of item 2.a;
 - b) the test indicating receiving water toxicity was carried out to completion (i.e., 7 days);
 - c) the permittee submitted all test results indicating receiving water toxicity with the reports and information required in Part 3 of this Section.

The synthetic dilution water shall have a pH, hardness, and alkalinity similar to that of the receiving water or a natural water in the drainage basin that is unaffected by the discharge, provided the magnitude of these parameters will not cause toxicity in a synthetic dilution water control that has been formulated to match the pH, hardness, and alkalinity naturally found in the receiving water. Upon approval, the permittee may substitute other appropriate dilution water with chemical and physical characteristics similar to that of the receiving water.

d. Samples and Composites

- 1) The permittee shall collect a minimum of three flow-weighted 24-hour composite samples from Outfall 002, Chronic. The second and third 24-hour composite samples will be used for the renewal of the dilution concentrations for each toxicity test. A 24-hour composite sample consists of a minimum of 12 effluent portions collected at equal time intervals

representative of a 24-hour operating day and combined proportionally to flow, or a sample continuously collected proportionally to flow over a 24-hour operating day.

- 2) The permittee shall collect the 24-hour composite samples such that the samples are representative of any periodic episode of chlorination, biocide usage, or other potentially toxic substance discharged on an intermittent basis.
- 3) The permittee shall initiate the toxicity tests within 36 hours after collection of the last portion of the first 24-hour composite sample. The holding time for any subsequent 24-hour composite sample shall not exceed 72 hours. Samples shall be maintained at a temperature of 0-6 degrees Centigrade during collection, shipping, and storage.
- 4) If flow from the outfall being tested ceases during the collection of effluent samples, the requirements for the minimum number of effluent samples, the minimum number of effluent portions, and the sample holding time, are waived during that sampling period. However, the permittee must have collected an effluent composite sample volume sufficient to complete the required toxicity tests with daily renewal of the effluent. When possible, the effluent samples used for the toxicity tests shall be collected on separate days if the discharge occurs over multiple days. The effluent composite sample collection duration and the static renewal protocol associated with the abbreviated sample collection must be documented in the full report required in Part 3 of this Section.

3. Reporting

All reports, tables, plans, summaries, and related correspondence required in any Part of this Section shall be submitted to the attention of the Water Quality Standards Team (MC 150) of the Water Quality Division. All DMRs, including DMRs with biomonitoring data, should be sent to the Enforcement Division (MC 224).

- a. The permittee shall prepare a full report of the results of all tests conducted pursuant to this permit in accordance with the Report Preparation Section of "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition" (EPA-821-R-02-013), or the most recent update thereof, for every valid and invalid toxicity test initiated whether carried to completion or not. All full reports shall be retained for 3 years at the plant site and shall be available for inspection by TCEQ personnel.
- b. A full report must be submitted with the first valid biomonitoring test results for each test species and with the first test results any time the permittee subsequently employs a different test laboratory. Full reports need not be submitted for subsequent testing unless specifically requested. The permittee shall routinely report the results of each biomonitoring test on the Table 1 forms provided with this permit. All Table 1 reports must include the information specified in the Table 1 form attached to this permit.
 - 1) Annual biomonitoring test results are due on or before January 20th for biomonitoring conducted during the previous 12 month period.
 - 2) Semiannual biomonitoring test results are due on or before July 20th and January 20th for biomonitoring conducted during the previous 6 month period.
 - 3) Quarterly biomonitoring test results are due on or before April 20th, July 20th, October 20th, and January 20th, for biomonitoring conducted during the previous calendar quarter.
 - 4) Monthly biomonitoring test results are due on or before the 20th day of the month following sampling.

c. Enter the following codes on the DMR for the appropriate parameters for valid tests only:

- 1) For the water flea, Parameter TLP3B, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."
- 2) For the water flea, Parameter TOP3B, report the NOEC for survival.
- 3) For the water flea, Parameter TXP3B, report the LOEC for survival.
- 4) For the water flea, Parameter TWP3B, enter a "1" if the NOEC for reproduction is less than the critical dilution; otherwise, enter a "0."
- 5) For the water flea, Parameter TPP3B, report the NOEC for reproduction.
- 6) For the water flea, Parameter TYP3B, report the LOEC for reproduction.
- 7) For the fathead minnow, Parameter TLP6C, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."
- 8) For the fathead minnow, Parameter TOP6C, report the NOEC for survival.
- 9) For the fathead minnow, Parameter TXP6C, report the LOEC for survival.
- 10) For the fathead minnow, Parameter TWP6C, enter a "1" if the NOEC for growth is less than the critical dilution; otherwise, enter a "0."
- 11) For the fathead minnow, Parameter TPP6C, report the NOEC for growth.
- 12) For the fathead minnow, Parameter TYP6C, report the LOEC for growth.

d. Enter the following codes on the DMR for retests only:

- 1) For retest number 1, Parameter 22415, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."
- 2) For retest number 2, Parameter 22416, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."

4. Persistent Toxicity

The requirements of this Part apply only when a test demonstrates a significant effect at the critical dilution. A significant effect is defined as a statistically significant difference, at the 95% confidence level, between a specified endpoint (survival, growth, or reproduction) of the test organism in a specified effluent dilution when compared to the specified endpoint of the test organism in the control. Significant lethality is defined as a statistically significant difference in survival at the critical dilution when compared to the survival of the test organism in the control. Significant sublethality is defined as a statistically significant difference in growth/reproduction at the critical dilution when compared to the growth/reproduction of the test organism in the control.

- a. The permittee shall conduct a total of 2 additional tests (retests) for any species that demonstrates a significant effect (lethal or sublethal) at the critical dilution. The two retests shall be conducted monthly during the next two consecutive months. The permittee shall not substitute either of the two retests in lieu of routine toxicity testing. All reports shall be submitted within 20 days of test completion. Test completion is defined as the last day of the test. The retests shall also be reported on the DMRs as specified in Part 3.d.

- b. If the retests are performed due to a demonstration of significant lethality, and one or both of the two retests specified in item 4.a. demonstrates significant lethality, the permittee shall initiate the TRE requirements as specified in Part 5. The provisions of item 4.a. are suspended upon completion of the two retests and submittal of the TRE Action Plan and Schedule defined in Part 5.

If neither test demonstrates significant lethality and the permittee is testing under the reduced testing frequency provision of Part 1.e., the permittee shall return to a quarterly testing frequency for that species.

- c. If the two retests are performed due to a demonstration of significant sublethality, and one or both of the two retests specified in item 4.a. demonstrates significant lethality, the permittee shall again perform two retests as stipulated in item 4.a.
- d. If the two retests are performed due to a demonstration of significant sublethality, and both retests pass, the permittee shall continue testing at the quarterly frequency until such time that the permittee can invoke the reduced testing frequency provision specified in Part 1.e.
- e. Regardless of whether retesting for lethal or sublethal effects, or a combination of the two, no more than one retest per month is required for a species.

5. Toxicity Reduction Evaluation

- a. Within 45 days of the last test day of the retest that demonstrates significant lethality, the permittee shall submit a General Outline for initiating a TRE. The outline shall include, but not be limited to, a description of project personnel, a schedule for obtaining consultants (if needed), a discussion of influent and/or effluent data available for review, a sampling and analytical schedule, and a proposed TRE initiation date.
- b. Within 90 days of the last test day of the retest that demonstrates significant lethality, the permittee shall submit a TRE Action Plan and Schedule for conducting a TRE. The plan shall specify the approach and methodology to be used in performing the TRE. A Toxicity Reduction Evaluation is a step-wise investigation combining toxicity testing with physical and chemical analysis to determine actions necessary to eliminate or reduce effluent toxicity to a level not effecting significant lethality at the critical dilution. The TRE Action Plan shall lead to the successful elimination of significant lethal effects at the critical dilution for both test species defined in item 1.b. As a minimum, the TRE Action Plan shall include the following:
 - 1) Specific Activities - The TRE Action Plan shall specify the approach the permittee intends to utilize in conducting the TRE, including toxicity characterizations, identifications, confirmations, source evaluations, treatability studies, and/or alternative approaches. When conducting characterization analyses, the permittee shall perform multiple characterizations and follow the procedures specified in the document entitled, "Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I" (EPA/600/6-91/005F), or alternate procedures. The permittee shall perform multiple identifications and follow the methods specified in the documents entitled, "Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081). All characterization, identification, and confirmation tests shall be conducted in an orderly and logical progression;
 - 2) Sampling Plan - The TRE Action Plan should describe sampling locations, methods, holding times, chain of custody, and preservation techniques. The effluent sample volume collected for all tests shall be adequate to perform the toxicity characterization/

identification/ confirmation procedures, and chemical-specific analyses when the toxicity tests show significant lethality. Where the permittee has identified or suspects specific pollutant(s) and/or source(s) of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical-specific analyses for the identified and/or suspected pollutant(s) and/or source(s) of effluent toxicity;

- 3) Quality Assurance Plan - The TRE Action Plan should address record keeping and data evaluation, calibration and standardization, baseline tests, system blanks, controls, duplicates, spikes, toxicity persistence in the samples, randomization, reference toxicant control charts, as well as mechanisms to detect artifactual toxicity; and
 - 4) Project Organization - The TRE Action Plan should describe the project staff, project manager, consulting engineering services (where applicable), consulting analytical and toxicological services, etc.
- c. Within 30 days of submittal of the TRE Action Plan and Schedule, the permittee shall implement the TRE with due diligence.
- d. The permittee shall submit quarterly TRE Activities Reports concerning the progress of the TRE. The quarterly reports are due on or before April 20th, July 20th, October 20th, and January 20th. The report shall detail information regarding the TRE activities including:
- 1) results and interpretation of any chemical specific analyses for the identified and/or suspected pollutant(s) performed during the quarter;
 - 2) results and interpretation of any characterization, identification, and confirmation tests performed during the quarter;
 - 3) any data and/or substantiating documentation which identifies the pollutant(s) and/or source(s) of effluent toxicity;
 - 4) results of any studies/evaluations concerning the treatability of the facility's effluent toxicity;
 - 5) any data which identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to meet no significant lethality at the critical dilution; and
 - 6) any changes to the initial TRE Plan and Schedule that are believed necessary as a result of the TRE findings.

Copies of the TRE Activities Report shall also be submitted to the U.S. EPA Region 6 office.

- e. During the TRE, the permittee shall perform, at a minimum, quarterly testing using the more sensitive species; testing for the less sensitive species shall continue at the frequency specified in Part 1.b.
- f. If the effluent ceases to effect significant lethality (herein as defined below) the permittee may end the TRE. A "cessation of lethality" is defined as no significant lethality for a period of 12 consecutive months with at least monthly testing. At the end of the 12 months, the permittee shall submit a statement of intent to cease the TRE and may then resume the testing frequency specified in Part 1.b. The permittee may only apply the "cessation of lethality" provision once.

This provision accommodate situations where operational errors and upsets, spills, or sampling errors triggered the TRE, in contrast to a situation where a single toxicant or group of toxicants cause lethality. This provision does not apply as a result of corrective actions taken by the permittee. "Corrective actions" are herein defined as proactive efforts which eliminate or reduce

effluent toxicity. These include, but are not limited to, source reduction or elimination, improved housekeeping, changes in chemical usage, and modifications of influent streams and/or effluent treatment.

The permittee may only apply this cessation of lethality provision once. If the effluent again demonstrates significant lethality to the same species, the permit will be amended to add a WET limit with a compliance period, if appropriate. However, prior to the effective date of the WET limit, the permittee may apply for a permit amendment removing and replacing the WET limit with an alternate toxicity control measure by identifying and confirming the toxicant and/or an appropriate control measure.

- g. The permittee shall complete the TRE and submit a Final Report on the TRE Activities no later than 28 months from the last test day of the retest that confirmed significant lethal effects at the critical dilution. The permittee may petition the Executive Director (in writing) for an extension of the 28-month limit. However, to warrant an extension the permittee must have demonstrated due diligence in their pursuit of the TIE/TRE and must prove that circumstances beyond their control stalled the TIE/TRE. The report shall provide information pertaining to the specific control mechanism(s) selected that will, when implemented, result in reduction of effluent toxicity to no significant lethality at the critical dilution. The report will also provide a specific corrective action schedule for implementing the selected control mechanism(s). A copy of the TRE Final Report shall also be submitted to the U.S. EPA Region 6 office.
- h. Based upon the results of the TRE and proposed corrective actions, this permit may be amended to modify the biomonitoring requirements, where necessary, to require a compliance schedule for implementation of corrective actions, to specify a WET limit, to specify a BMP, and/or to specify CS limits.

TABLE 1 (SHEET 1 OF 4)

BIOMONITORING REPORTING

CERIODAPHNIA DUBIA SURVIVAL AND REPRODUCTION

Dates and Times
Composites
Collected

No. 1 FROM: _____ Date _____ Time _____ TO: _____ Date _____ Time _____

No. 2 FROM: _____ Date _____ Time _____ TO: _____ Date _____ Time _____

No. 3 FROM: _____ Date _____ Time _____ TO: _____ Date _____ Time _____

Test initiated: _____ am/pm _____ date

Dilution water used: _____ Receiving Water _____ Synthetic Dilution Water

NUMBER OF YOUNG PRODUCED PER ADULT AT END OF TEST

REP	Percent effluent (%)					
	0%	32%	42%	56%	75%	100%
A						
B						
C						
D						
E						
F						
G						
H						
I						
J						
Surviv. Mean						
Total Mean						
CV%*						
PMSD	Acceptable Range 13-47					

*coefficient of variation = standard deviation x 100/mean (calculation based on young of the surviving adults)

Designate males (M), and dead females (D), along with number of neonates (x) released prior to death.

TABLE 1 (SHEET 2 OF 4)

BIOMONITORING REPORTING

CERIODAPHNIA DUBIA SURVIVAL AND REPRODUCTION TEST

1. Dunnett's Procedure or Steel's Many-One Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean number of young produced per adult significantly less ($p=0.05$) than the number of young per adult in the control for the % effluent corresponding to significant nonlethal effects?

CRITICAL DILUTION (100%): _____ YES _____ NO

PERCENT SURVIVAL

Time of Reading	Percent effluent (%)					
	0%	32%	42%	56%	75%	100%
24h						
48h						
End of Test						

2. Fisher's Exact Test:

Is the mean survival at test end significantly less ($p=0.05$) than the control survival for the % effluent corresponding to lethality?

CRITICAL DILUTION (100%): _____ YES _____ NO

3. Enter percent effluent corresponding to each NOEC\LOEC below :

a.) NOEC survival = _____ % effluent

b.) LOEC survival = _____ % effluent

c.) NOEC reproduction = _____ % effluent

d.) LOEC reproduction = _____ % effluent

TABLE 1 (SHEET 3 OF 4)
BIOMONITORING REPORTING
FATHEAD MINNOW LARVAE GROWTH AND SURVIVAL

Dates and Times Composites Collected

Date Time Date
Time

No. 1 FROM: _____ TO: _____

No. 2 FROM: _____ TO: _____

No. 3 FROM: _____ TO: _____

Test initiated: _____ am/pm _____ date

Dilution water used: _____ Receiving Water _____ Synthetic Dilution Water

FATHEAD MINNOW GROWTH DATA

Effluent Concentration (%)	Average Dry Weight in milligrams in replicate chambers					Mean Dry Weight	CV%*
	A	B	C	D	E		
0%							
32%							
42%							
56%							
75%							
100%							
PMSD	Acceptable Range 12-30						

* coefficient of variation = standard deviation x 100/mean

- Dunnett's Procedure or Steel's Many-One Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean dry weight (growth) at 7 days significantly less ($p=0.05$) than the control's dry weight (growth) for the % effluent corresponding to significant nonlethal effects?

CRITICAL DILUTION (100%): _____ YES _____ NO

TABLE 1 (SHEET 4 OF 4)

BIOMONITORING REPORTING

FATHEAD MINNOW GROWTH AND SURVIVAL TEST

FATHEAD MINNOW SURVIVAL DATA

Effluent Concentration (%)	Percent Survival in replicate chambers					Mean percent survival			CV%*
	A	B	C	D	E	24h	48h	7 day	
0%									
32%									
42%									
56%									
75%									
100%									

* coefficient of variation = standard deviation x 100/mean

2. Dunnett's Procedure or Steel's Many-One Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean survival at 7 days significantly less ($p=0.05$) than the control survival for the % effluent corresponding to lethality?

CRITICAL DILUTION (100%): _____ YES _____ NO

3. Enter percent effluent corresponding to each NOEC/LOEC below:

a.) NOEC survival = _____ % effluent

b.) LOEC survival = _____ % effluent

c.) NOEC growth = _____ % effluent

d.) LOEC growth = _____ % effluent

24-HOUR ACUTE BIOMONITORING REQUIREMENTS: FRESHWATER

The provisions of this Section apply individually and separately to Outfall 002 for whole effluent toxicity testing (biomonitoring). No samples or portions of samples from one outfall may be composited with samples or portions of samples from another outfall.

1. Scope, Frequency and Methodology

- a. The permittee shall test the effluent for lethality in accordance with the provisions in this Section. Such testing will determine compliance with the Surface Water Quality Standard, 30 TAC §307.6(e)(2)(B), of greater than 50% survival of the appropriate test organisms in 100% effluent for a 24-hour period.
- b. The toxicity tests specified shall be conducted once per six months. The permittee shall conduct the following toxicity tests utilizing the test organisms, procedures, and quality assurance requirements specified in this section of the permit and in accordance with "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition" (EPA-821-R-02-012), or the most recent update thereof:
 - 1) Acute 24-hour static toxicity test using the water flea (*Daphnia pulex* or *Ceriodaphnia dubia*). A minimum of five replicates with eight organisms per replicate shall be used in the control and in each dilution.
 - 2) Acute 24-hour static toxicity test using the fathead minnow (*Pimephales promelas*). A minimum of five replicates with eight organisms per replicate shall be used in the control and in each dilution.

The permittee must perform and report a valid test for each test species during the prescribed reporting period. An invalid test must be repeated during the same reporting period. An invalid test is herein defined as any test failing to satisfy the test acceptability criteria, procedures, and quality assurance requirements specified in the test methods and permit. All test results, valid or invalid, must be submitted as described below.

- c. In addition to an appropriate control, a 100% effluent concentration shall be used in the toxicity tests. Except as discussed in item 2.b., the control and/or dilution water shall consist of a standard, synthetic, moderately hard, reconstituted water.
- d. This permit may be amended to require a Whole Effluent Toxicity (WET) limit, a Best Management Practice (BMP), Chemical-Specific (CS) limits, additional toxicity testing, and/or other appropriate actions to address toxicity. The permittee may be required to conduct additional biomonitoring tests and/or a Toxicity Reduction Evaluation (TRE) if biomonitoring data indicate multiple numbers of unconfirmed toxicity events.
- e. As the dilution series specified in the Chronic Biomonitoring Requirements includes a 100% effluent concentration, the results from those tests may fulfill the requirements of this Section; any tests performed in the proper time interval may be substituted. Compliance will be evaluated as specified in item a. The 50% survival in 100% effluent for a 24-hour period standard applies to all tests utilizing a 100% effluent dilution, regardless of whether the results are submitted to comply with the minimum testing frequency defined in item b.

2. Required Toxicity Testing Conditions

- a. Test Acceptance - The permittee shall repeat any toxicity test, including the control, if the control fails to meet a mean survival equal to or greater than 90%.

- b. Dilution Water - In accordance with item 1.c., the control and/or dilution water shall normally consist of a standard, synthetic, moderately hard, reconstituted water. If the permittee utilizes the results of a 48-Hour Acute test or a Chronic test to satisfy the requirements in item 1.e., the permittee may use the receiving water or dilution water that meets the requirements of item 2.a. as the control and dilution water.
- c. Samples and Composites
 - 1) The permittee shall collect one flow-weighted 24-hour composite sample from Outfall 002. A 24-hour composite sample consists of a minimum of 12 effluent portions collected at equal time intervals representative of a 24-hour operating day and combined proportional to flow, or a sample continuously collected proportional to flow over a 24-hour operating day.
 - 2) The permittee shall collect the 24-hour composite samples such that the samples are representative of any periodic episode of chlorination, biocide usage, or other potentially toxic substance discharged on an intermittent basis.
 - 3) The permittee shall initiate the toxicity tests within 36 hours after collection of the last portion of the 24-hour composite sample. Samples shall be maintained at a temperature of 0-6 degrees Centigrade during collection, shipping, and storage.
 - 4) If the Outfall ceases discharging during the collection of the effluent composite sample, the requirements for the minimum number of effluent portions are waived. However, the permittee must have collected a composite sample volume sufficient for completion of the required test. The abbreviated sample collection, duration, and methodology must be documented in the full report required in Part 3 of this Section.

3. Reporting

All reports, tables, plans, summaries, and related correspondence required in any Part of this Section shall be submitted to the attention of the Water Quality Standards Team (MC 150) of the Water Quality Division. All DMRs, including DMRs with biomonitoring data, should be sent to the Enforcement Division (MC 224).

- a. The permittee shall prepare a full report of the results of all tests conducted pursuant to this permit in accordance with the Report Preparation Section of "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition" (EPA-821-R-02-012), or the most recent update thereof, for every valid and invalid toxicity test initiated. All full reports shall be retained for three years at the plant site and shall be available for inspection by TCEQ personnel.
- b. A full report must be submitted with the first valid biomonitoring test results for each test species and with the first test results any time the permittee subsequently employs a different test laboratory. Full reports need not be submitted for subsequent testing unless specifically requested. The permittee shall routinely report the results of each biomonitoring test on the Table 2 forms provided with this permit. All Table 2 reports must include the information specified in the Table 2 form attached to this permit.
 - 1) Semiannual biomonitoring test results are due on or before January 20th and July 20th for biomonitoring conducted during the previous 6 month period.
 - 2) Quarterly biomonitoring test results are due on or before January 20th, April 20th, July 20th, and October 20th, for biomonitoring conducted during the previous calendar quarter.

- c. Enter the following codes on the DMR for the appropriate parameters for valid tests only:
- 1) For the water flea, Parameter TIE3D, enter a "0" if the mean survival at 24-hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter a "1."
 - 2) For the fathead minnow, Parameter TIE6C, enter a "0" if the mean survival at 24-hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter a "1."
- d. Enter the following codes on the DMR for retests only:
- 1) For retest number 1, Parameter 22415, enter a "0" if the mean survival at 24-hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter a "1."
 - 2) For retest number 2, Parameter 22416, enter a "0" if the mean survival at 24-hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter a "1."

4. Persistent Mortality

The requirements of this Part apply when a toxicity test demonstrates significant lethality, here defined as a mean mortality of 50% or greater to organisms exposed to the 100% effluent concentration after 24-hours.

- a. The permittee shall conduct two additional tests (retests) for each species that demonstrates significant lethality. The two retests shall be conducted once per week for two weeks. Five effluent dilution concentrations in addition to an appropriate control shall be used in the retests. These additional effluent concentrations are 6%, 13%, 25%, 50% and 100% effluent. The first retest shall be conducted within 15 days of the laboratory determination of significant lethality. All test results shall be submitted within 20 days of test completion of the second retest. Test completion is defined as the 24th hour. The retests shall also be reported on the DMRs as specified in Part 3.d.
- b. If one or both of the two retests specified in item 4.a. demonstrates significant lethality, the permittee shall initiate the TRE requirements as specified in Part 5 of this Section.

5. Toxicity Reduction Evaluation

- a. Within 45 days of the retest that demonstrates significant lethality, the permittee shall submit a General Outline for initiating a TRE. The outline shall include, but not be limited to, a description of project personnel, a schedule for obtaining consultants (if needed), a discussion of influent and/or effluent data available for review, a sampling and analytical schedule, and a proposed TRE initiation date.
- b. Within 90 days of the retest that demonstrates significant lethality, the permittee shall submit a TRE Action Plan and Schedule for conducting a TRE. The plan shall specify the approach and methodology to be used in performing the TRE. A Toxicity Reduction Evaluation is a step-wise investigation combining toxicity testing with physical and chemical analysis to determine actions necessary to eliminate or reduce effluent toxicity to a level not effecting significant lethality at the critical dilution. The TRE Action Plan shall lead to the successful elimination of significant lethality for both test species defined in item 1.b. As a minimum, the TRE Action Plan shall include the following:

- 1) Specific Activities - The TRE Action Plan shall specify the approach the permittee intends to utilize in conducting the TRE, including toxicity characterizations, identifications, confirmations, source evaluations, treatability studies, and/or alternative approaches. When conducting characterization analyses, the permittee shall perform multiple characterizations and follow the procedures specified in the document entitled, "Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures" (EPA/600/6-91/003), or alternate procedures. The permittee shall perform multiple identifications and follow the methods specified in the documents entitled, "Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081). All characterization, identification, and confirmation tests shall be conducted in an orderly and logical progression;
 - 2) Sampling Plan - The TRE Action Plan should describe sampling locations, methods, holding times, chain of custody, and preservation techniques. The effluent sample volume collected for all tests shall be adequate to perform the toxicity characterization/identification/confirmation procedures, and chemical-specific analyses when the toxicity tests show significant lethality. Where the permittee has identified or suspects specific pollutant(s) and/or source(s) of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical-specific analyses for the identified and/or suspected pollutant(s) and/or source(s) of effluent toxicity;
 - 3) Quality Assurance Plan - The TRE Action Plan should address record keeping and data evaluation, calibration and standardization, baseline tests, system blanks, controls, duplicates, spikes, toxicity persistence in the samples, randomization, reference toxicant control charts, as well as mechanisms to detect artifactual toxicity; and
 - 4) Project Organization - The TRE Action Plan should describe the project staff, project manager, consulting engineering services (where applicable), consulting analytical and toxicological services, etc.
- c. Within 30 days of submittal of the TRE Action Plan and Schedule, the permittee shall implement the TRE with due diligence.
- d. The permittee shall submit quarterly TRE Activities Reports concerning the progress of the TRE. The quarterly TRE Activities Reports are due on or before April 20th, July 20th, October 20th, and January 20th. The report shall detail information regarding the TRE activities including:
- 1) results and interpretation of any chemical-specific analyses for the identified and/or suspected pollutant(s) performed during the quarter;
 - 2) results and interpretation of any characterization, identification, and confirmation tests performed during the quarter;
 - 3) any data and/or substantiating documentation which identifies the pollutant(s) and/or source(s) of effluent toxicity;
 - 4) results of any studies/evaluations concerning the treatability of the facility's effluent toxicity;
 - 5) any data which identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to eliminate significant lethality; and

- 6) any changes to the initial TRE Plan and Schedule that are believed necessary as a result of the TRE findings.

Copies of the TRE Activities Report shall also be submitted to the U.S. EPA Region 6 office.

- e. During the TRE, the permittee shall perform, at a minimum, quarterly testing using the more sensitive species; testing for the less sensitive species shall continue at the frequency specified in Part 1.b.
- f. If the effluent ceases to effect significant lethality (herein as defined below) the permittee may end the TRE. A "cessation of lethality" is defined as no significant lethality for a period of 12 consecutive weeks with at least weekly testing. At the end of the 12 weeks, the permittee shall submit a statement of intent to cease the TRE and may then resume the testing frequency specified in Part 1.b. The permittee may only apply the "cessation of lethality" provision once.

This provision accommodate situations where operational errors and upsets, spills, or sampling errors triggered the TRE, in contrast to a situation where a single toxicant or group of toxicants cause lethality. This provision does not apply as a result of corrective actions taken by the permittee. "Corrective actions" are herein defined as proactive efforts which eliminate or reduce effluent toxicity. These include, but are not limited to, source reduction or elimination, improved housekeeping, changes in chemical usage, and modifications of influent streams and/or effluent treatment.

The permittee may only apply this cessation of lethality provision once. If the effluent again demonstrates significant lethality to the same species, the permit will be amended to add a WET limit with a compliance period, if appropriate. However, prior to the effective date of the WET limit, the permittee may apply for a permit amendment removing and replacing the WET limit with an alternate toxicity control measure by identifying and confirming the toxicant and/or an appropriate control measure.

- g. The permittee shall complete the TRE and submit a Final Report on the TRE Activities no later than 18 months from the last test day of the retest that demonstrates significant lethality. The permittee may petition the Executive Director (in writing) for an extension of the 18-month limit. However, to warrant an extension the permittee must have demonstrated due diligence in their pursuit of the TIE/TRE and must prove that circumstances beyond their control stalled the TIE/TRE. The report shall specify the control mechanism(s) that will, when implemented, reduce effluent toxicity as specified in item 5.g. The report will also specify a corrective action schedule for implementing the selected control mechanism(s). A copy of the TRE Final Report shall also be submitted to the U.S. EPA Region 6 office.
- h. Within 3 years of the last day of the test confirming toxicity, the permittee shall comply with 30 TAC 307.6.(e)(2)(B), which requires greater than 50% survival of the test organism in 100% effluent at the end of 24-hours. The permittee may petition the Executive Director (in writing) for an extension of the 3-year limit. However, to warrant an extension the permittee must have demonstrated due diligence in their pursuit of the TIE/TRE and must prove that circumstances beyond their control stalled the TIE/TRE.

The requirement to comply with 30 TAC 307.6.(e)(2)(B) may be exempted upon proof that toxicity is caused by an excess, imbalance, or deficiency of dissolved salts. This exemption excludes instances where individually toxic components (e.g. metals) form a salt compound. Following the exemption, the permit may be amended to include an ion-adjustment protocol, alternate species testing, or single species testing.

- i. Based upon the results of the TRE and proposed corrective actions, this permit may be amended

to modify the biomonitoring requirements where necessary, to require a compliance schedule for implementation of corrective actions, to specify a WET limit, to specify a BMP, and/or to specify a CS limit.

TABLE 2 (SHEET 1 OF 2)

WATER FLEA SURVIVAL

GENERAL INFORMATION

	Time (am/pm)	Date
Composite Sample Collected		
Test Initiated		

PERCENT SURVIVAL

Time	Rep	Percent effluent (%)					
		0%	6%	13%	25%	50%	100%
24h	A						
	B						
	C						
	D						
	E						
	MEAN*						

Enter percent effluent corresponding to the LC50 below:

24 hour LC50 = _____ % effluent

95% confidence limits: _____

Method of LC50 calculation: _____

* If 24-hour survivorship data from the chronic *Ceriodaphnia dubia* test is being used, the mean survival per dilution for all 10 replicates shall be reported on this row.

TABLE 2 (SHEET 2 OF 2)
FATHEAD MINNOW SURVIVAL

GENERAL INFORMATION

	Time (am/pm)	Date
Composite Sample Collected		
Test Initiated		

PERCENT SURVIVAL

Time	Rep	Percent effluent (%)					
		0%	6%	13%	25%	50%	100%
24h	A						
	B						
	C						
	D						
	E						
	MEAN						

Enter percent effluent corresponding to the LC50 below:

24 hour LC50 = _____% effluent

95% confidence limits: _____

Method of LC50 calculation: _____